BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Master of Technology in Computer Science & Engineering
Course Name – Advanced Operating System
Course Code - PCC-MCS203
(Semester II)

Time allotted : 1 Hrs.15 Min. **Full Marks : 60**

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question) 1 x 60=60

Choose the correct alternative from the following :

(1) Which one of the following is not true?

a) kernel is the program that constitutes the central core of the operating system
b) kernel is the first part of operating system to load into memory during booting
c) kernel is made of various modules which can not be loaded in running operating system
d) kernel remains in the memory during the entire computer session

(2) By operating system, the resource management can be done via _____

a) time division multiplexing
b) space division multiplexing
c) time and space division multiplexing
d) none of the mentioned

(3) Which facility dynamically adds probes to a running system, both in user processes and in the kernel?

a) DTrace
b) DLocate
c) DMap
d) DAdd

(4) The OS X has _____

a) monolithic kernel
b) hybrid kernel
c) micro kernel
d) monolithic kernel with modules

(5) Which one is the innermost component of Operating System?

a) Kernel
b) Shell
c) both a and b
d) None of this

(6) Which one is the outermost component of Operating System?

a) Kernel
b) Shell
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d) None of this

(7) Multiprocessing system gives a

a) Small system
b) ightly coupled system
c) loosely coupled system
d) Macro system

(8) Multiprocessor system have advantage of

a) Increased Throughput
b) xpensive hardware
c) operating system
d) both a and b

(9) Timer is used to prevent a single

a) Job
b) Time
c) Computer
d) Information

(10) What is the function of Shell?

a) Makes Communication between Hardware and Software
b) Makes Communication between Application and Software Software.
c) Makes interface for Users
d) None of this

(11) Example of Types of OS are:

a) atch System and Multiprocessor
b) esktop and Cluster System
c) Real Time and Distributed
d) All in the above

(12) Third Generation of OS in_____

a) 945-1965
b) 965-1980
c) 1980-1995
d) 1995-Now

(13) Simple Batch OS is in Which Generation?

a) st Generation
b) nd Generation
c) 3rd Generation
d) 4thGeneration

(14) The systems which allow only one process execution at a time, are called _____

a) uni programming systems
b) uni processing systems
c) uni tasking systems
d) none of the mentioned

(15) Process control by_____

a) OS Kernel
b) Shell
c) Both and b
d) none of the mentioned

(16) A process can be terminated due to _____

a) normal exit
b) fatal error
c) killed by another process
d) all of the mentioned

(17) A process stack does not contain _____

a) Function parameters
b) Local variables
c) Return addresses
d) PID of child process

(18) The address of the next instruction to be executed by the current process is provided by the _____

a) CPU registers
b) Program counter
c) Process stack
d) Pipe

(19) The context of a process in the PCB of a process does not contain _____

a) the value of the CPU registers
b) the process state
c) memory-management information
d) context switch time

(20) What is a medium-term scheduler?

a) It selects which process has to be brought into
b) It selects which process has to be executed

the ready queue
next and allocates CPU

c) It selects which process to remove from memory by swapping
d) None of the mentioned

(21) What is a short-term scheduler?

a) It selects which process has to be brought into the ready queue
b) It selects which process has to be executed next and allocates CPU

c) It selects which process to remove from memory by swapping
d) None of the mentioned

(22) 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

(23) 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

(24) The FCFS algorithm is particularly troublesome for _____

a) time sharing systems
b) multiprogramming systems

c) multiprocessor systems
d) operating systems

(25) 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

(26) Which of the following scheduling algorithms gives minimum average waiting time?

a) FCFS
b) SJF

c) Round – robin
d) Priority

(27) Scheduling is done so as to _____

a) increase CPU utilization
b) decrease CPU utilization

c) keep the CPU more idle
d) none of the mentioned

(28) Mutual exclusion can be provided by the _____

a) mutex locks
b) binary semaphores

c) both mutex locks and binary semaphores
d) none of the mentioned

(29) A monitor is a module that encapsulates _____

a) shared data structures
b) procedures that operate on shared data structure

c) synchronization between concurrent procedure invocation
d) all of the mentioned

(30) Semaphore is a/an _____ to solve the critical section problem.

a) hardware for a system
b) special program for a system

c) integer variable
d) none of the mentioned

(31) The wait operation of the semaphore basically works on the basic _____ system call.

a) stop()
b) block()

c) hold()
d) wait()

(32) The code that changes the value of the semaphore is _____

a) remainder section code
b) non – critical section code

c) critical section code
d) none of the mentioned

(33) Each process Pi, i = 0,1,2,3,……,9 is coded as follows. repeat P(mutex) {Critical Section} V(mutex) Forever The code for P10 is identical except that it uses V(mutex) instead of P(mutex). What is the largest number of processes that can be inside the critical section at any moment (the mutex being initialized to 1)?

a) 1
b) 2
c) 3
d) None of the mentioned

(34) What is a semaphore?

a) is a binary mutex
b) must be accessed from only one process
c) can be accessed from multiple processes
d) none of the mentioned

(35) What is a mutex?

a) is a binary mutex
b) must be accessed from only one process
c) can be accessed from multiple processes
d) none of the mentioned

(36) A binary semaphore is a semaphore with integer values _____

a) 1
b) -1
c) 0.8
d) 0.5

(37) Semaphores are mostly used to implement _____

a) System calls
b) IPC mechanisms
c) System protection
d) None of the mentioned

(38) The circular wait condition can be prevented by _____

a) defining a linear ordering of resource types
b) using thread
c) using pipes
d) all of the mentioned

(39) What are Multithreaded programs?

a) lesser prone to deadlocks
b) more prone to deadlocks
c) not at all prone to deadlocks
d) none of the mentioned

(40) To avoid deadlock _____

a) there must be a fixed number of resources to allocate
b) resource allocation must be done only once
c) all deadlocked processes must be aborted
d) inversion technique can be used

(41) Swap space exists in _____

a) primary memory
b) secondary memory
c) Central Processing Unit
d) none of the mentioned

(42) In FIFO page replacement algorithm, when a page must be replaced _____

a) oldest page is chosen
b) newest page is chosen
c) random page is chosen
d) none of the mentioned

(43) Working set model for page replacement is based on the assumption of _____

a) modularity
b) locality
c) globalization
d) random access

(44) A memory page containing a heavily used variable that was initialized very early and is in constant use is removed, then the page replacement algorithm used is _____

a) LRU
b) LFU
c) FIFO
d) None of the mentioned

(45) If no frames are free, _____ page transfer(s) is/are required.

a) one
b) two
c) three
d) four

(46) The aim of creating page replacement algorithms is to _____

a) replace pages faster
b) increase the page fault rate
c) decrease the page fault rate
d) to allocate multiple pages to processes

(47) What is the Optimal page – replacement algorithm?

a) Replace the page that has not been used for a long time
b) Replace the page that has been used for a long time
c) Replace the page that will not be used for a long time
d) None of the mentioned

(48) Virtual memory is normally implemented by _____

a) demand paging
b) buses
c) virtualization
d) all of the mentioned

(49) What are the two methods of the LRU page replacement policy that can be implemented in hardware?

a) Counters
b) RAM & Registers
c) Stack & Counters
d) Registers

(50) For 3 page frames, the following is the reference string: 7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1 How many page faults does the LRU page replacement algorithm produce?

a) 10
b) 15
c) 11
d) 12

(51) Using a pager _____

a) increases the swap time
b) decreases the swap time
c) decreases the swap time & amount of physical memory needed
d) increases the amount of physical memory needed

(52) A page fault occurs when?

a) a page gives inconsistent data
b) a page cannot be accessed due to its absence from memory
c) a page is invisible
d) all of the mentioned

(53) When the page fault rate is low _____

a) the turnaround time increases
b) the effective access time increases
c) the effective access time decreases
d) turnaround time & effective access time increases

(54) Logical memory is broken into blocks of the same size called _____

a) frames
b) pages
c) backing store
d) none of the mentioned

(55) The _____ is used as an index into the page table.

a) frame bit
b) page number
c) page offset
d) frame offset

(56) The size of a page is typically _____

a) varied
b) power of 2
c) power of 4
d) none of the mentioned

(57) The operating system maintains a _____ table that keeps track of how many frames have been allocated, how many are there, and how many are available.

a) page
b) mapping
c) frame
d) memory

(58) Smaller page tables are implemented as a set of _____

a) queues
b) stacks
c) counters
d) registers

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

a) page table base register
b) page table base pointer
c) page table register pointer
d) page table base

(60) In _____ information is recorded magnetically on platters.

a) magnetic disks
b) electrical disks
c) assemblies
d) cylinders