BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Technology in Computer Science & Engineering
Course Name – Operating Systems
Course Code - PCC-CS403
(Semester IV)

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) What is operating system?

   a) collection of programs that manages hardware resources
   b) system service provider to the application programs
   c) link to interface the hardware and application programs
   d) all of the mentioned

(2) To access the services of operating system, the interface is provided by the _____

   a) System calls
   b) API
   c) Library
   d) Assembly instructions

(3) 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

(4) Which one of the following is not a real time operating system?

   a) VxWorks
   b) Windows CE
   c) RTLinux
   d) Palm OS

(5) Which one is the Master Software?

   a) Operating System
   b) Application Software
   c) both a and b
   d) None of this

(6) What is the function of Kernel?

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

(7) 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

(8) 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

(9) Process control by_____

a) OS Kernel

b) Shell

c) Both and b

d) none of the mentioned

(10) A process can be terminated due to _____

a) normal exit

b) fatal error

c) killed by another process

d) all of the mentioned

(11) A process stack does not contain _____

a) Function parameters

b) Local variables

c) Return addresses

d) PID of child process

(12) In a multiprogramming environment _____

a) more than one process resides in the memory

b) a single user can execute many programs at the same time

c) the processor executes more than one process at a time

d) the programs are developed by more than one person

(13) 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

(14) 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

(15) 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,,,,

(16) 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

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

a) FCFS

b) SJF

c) Round – robin

d) Priority

(18) 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

(19) If a process is executing in its critical section, then no other processes can be executing in their critical section. This condition is called?

a) mutual exclusion

b) critical exclusion

c) synchronous exclusion   d) asynchronous exclusion

(20) Which one of the following is a synchronization tool?

a) thread   b) pipe

c) semaphore   d) socket

(21) To enable a process to wait within the monitor _____

a) a condition variable must be declared as   b) condition variables must be used as Boolean
condition   objects

c) semaphore must be used   d) all of the mentioned

(22) 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

(23) What are the two kinds of semaphores?

a) mutex & counting   b) binary & counting

c) counting & decimal   d) decimal & binary

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

a) 1   b) -1

c) 0.8   d) 0.5

(25) Which one of the following is the deadlock avoidance algorithm?

a) banker's algorithm   b) round-robin algorithm

c) elevator algorithm   d) karn's algorithm

(26) To avoid deadlock _____

a) there must be a fixed number of resources to   b) resource allocation must be done only once
allocate

c) all deadlocked processes must be aborted   d) inversion technique can be used

(27) Which algorithm chooses the page that has not been used for the longest period of time
whenever the page required to be replaced?

a) first in first out algorithm   b) additional reference bit algorithm

c) least recently used algorithm   d) counting based page replacement algorithm

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

a) modularity   b) locality

c) globalization   d) random access

(29) Which of the following page replacement algorithms suffers from Belady's Anomaly?

a) Optimal replacement   b) LRU

c) FIFO   d) Both optimal replacement and FIFO

(30) When a page is selected for replacement, and its modify bit is set _____

a) the page is clean   b) the page has been modified since it was read
in from the disk

c) the page is dirty   d) the page has been modified since it was read
in from the disk & page is dirty

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

a) Replace the page that has not been used for a   b) Replace the page that has been used for a long
long time   time

c) Replace the page that will not be used for a   d) None of the mentioned

long time

(32) Virtual memory is normally implemented by _____

a) demand paging

b) buses

c) virtualization

d) all of the mentioned

(33) LRU page – replacement algorithm associates with each page the _____

a) time it was brought into memory

b) the time of that page's last use

c) page after and before it

d) all of the mentioned

(34) 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

(35) The valid – invalid bit, in this case, when valid indicates?

a) the page is not legal

b) the page is illegal

c) the page is in memory

d) the page is not in memory

(36) 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

(37) Every address generated by the CPU is divided into two parts. They are _____

a) frame bit & page number

b) page number & page offset

c) page offset & frame bit

d) frame offset & page offset

(38) 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

(39) 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

(40) For every process there is a _____

a) page table

b) copy of page table

c) pointer to page table

d) all of the mentioned

(41) Consider a disk queue with requests for I/O to blocks on cylinders.98 183 37 122 14 124 65 67 Considering FCFS (first cum first served) scheduling, the total number of head movements is, if the disk head is initially at 53 is? Considering SSTF (shortest seek time first) scheduling, the total number of head movements is, if the disk head is initially at 53 is?

a) 224

b) 236

c) 245

d) 240

(42) In the _____ algorithm, the disk arm starts at one end of the disk and moves toward the other end, servicing requests till the other end of the disk. At the other end, the direction is reversed and servicing continues.

a) LOOK

b) SCAN

c) C-SCAN

d) C-LOOK

(43) The data-in register of I/O port is _____

    a) Read by host to get input   b) Read by controller to get input

    c) Written by host to send output   d) Written by host to start a command

(44) 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

(45) Function of Kernel

    a) Makes Communication between Hardware and Software   b) Makes Communication between Application and Software Software.

    c) Makes interface for Users   d) None of this

(46) Master structure of Linux is

    a) Microsoft Windows   b) UNIX

    c) Window Vista   d) Monolithic Kernel

(47) 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

(48) A process stack does not contain

    a) Function parameters   b) Local variables

    c) Return addresses   d) PID of child process

(49) Time quantum algorithm defines

    a) shortest job scheduling algorithm   b) round robin scheduling algorithm

    c) priority scheduling algorithm   d) multilevel queue scheduling algorithm

(50) SSTF algorithm, like SJF _____ of some requests.

    a) may cause starvation   b) will cause starvation

    c) does not cause starvation   d) causes aging

(51) The time taken for the desired sector to rotate to the disk head is called _____

    a) positioning time   b) random access time

    c) seek time   d) rotational latency

(52) Paging increases the _____ time.

    a) waiting   b) execution

    c) context – switch   d) all of the mentioned

(53) 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

(54) A process refers to 5 pages, A, B, C, D, E in the order : A, B, C, D, A, B, E, A, B, C, D, E. If the page replacement algorithm is FIFO, the number of page transfers with an empty internal store of 3 frames is?

    a) 8   b) 10

    c) 9   d) 7

(55) When a program tries to access a page that is mapped in address space but not loaded in physical memory, then _____

    a) segmentation fault occurs   b) fatal error occurs

c) page fault occurs   d) no error occurs

(56) 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

(57) A system is in the safe state if _____

    a) the system can allocate resources to each   b)
       process in some order and still avoid a   there exist a safe sequence
       deadlock

    c) all of the mentioned   d) none of the mentioned

(58) Spinlocks are intended to provide _____ only.

    a) Mutual Exclusion   b) Bounded Waiting

    c) Aging   d) Progress

(59) 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

(60) What are the two atomic operations permissible on semaphores?

    a) wait   b) stop

    c) hold   d) none of the mentioned