



Final Exam - 50 Questions (100 Points) - Model (1)

1. (2 points) System calls provide an interface to the services provided by the OS. (A) true (B) false
2. (2 points) A monolithic OS structure suffers from slow communication within the kernel. (A) true (B) false
3. (2 points) Degree of multi-programming is the number of programs on disk. (A) true (B) false
4. (2 points) A CPU-bound process uses more of its time doing computations. (A) true (B) false
5. (2 points) The operating system consists of a kernel and a set of application programs. (A) true (B) false
6. (2 points) The bootstrap program is a firmware. (A) true (B) false
7. (2 points) Fault tolerant systems can continue operation despite of failures. (A) true (B) false
8. (2 points) Cloud computing delivers computing as a service and users pay based on usage. (A) true (B) false
9. (2 points) Process creation is heavy weight while thread creation is light weight. (A) true (B) false
10. (2 points) Task parallelism distributes subsets of the same data across multiple cores. (A) true (B) false
11. (2 points) Atomic instructions execute as one uninterruptible unit. (A) true (B) false
12. (2 points) A RAG is a directed graph that can precisely describe deadlocks. (A) true (B) false
13. (2 points) CPU response time is the number of completed processes per time unit. (A) true (B) false
14. (2 points) The CPU scheduler gives control of the CPU to the process selected by the OS. (A) true (B) false
15. (2 points) In compile-time address binding, the logical and physical addresses are the same. (A) true (B) false
16. (2 points) The limit register holds the address of the last word in the process address space. (A) true (B) false
17. (2 points) Demand paging brings a page into memory only when it is needed. (A) true (B) false
18. (2 points) The LRU algorithm replaces the page that has not been used for the longest time. (A) true (B) false
19. (2 points) Recycling a file allows a user to erase the contents of a file but keep its attributes. (A) true (B) false
20. (2 points) The file pointer must be kept separate from the on-disk file attributes. (A) true (B) false
21. (2 points) In cloud computing, a cloud is available to anyone via the Internet.
(A) public (B) private (C) restricted (D) hybrid
22. (2 points) Structuring the OS using the approach relies on LKM to link additional services.
(A) monolithic (B) layered (C) micro-kernel (D) modules
23. (2 points) Structuring the OS using the approach implements all nonessential components as system programs.
(A) monolithic (B) layered (C) micro-kernel (D) modules
24. (2 points) Structuring the OS using the approach can result in poor performance.
(A) monolithic (B) layered (C) micro-kernel (D) modules
25. (2 points) refers to the use of high speed memory to hold a copy of recently accessed data.
(A) Caching (B) Speedup (C) Fetching (D) Booting

26. (2 points) In a multiprocessor system, the speedup ratio with N processors is N .
(A) divided by (B) equal to (C) more than (D) less than
27. (2 points) In clustering, two or more nodes are running applications and are monitoring each other.
(A) symmetric (B) asymmetric (C) hot-stand-by (D) client-server
28. (2 points) A system can have only one job (process) in memory at a time.
(A) batch (B) multi-programming (C) time-sharing (D) multitasking
29. (2 points) A system is a collection of physically separate computer systems that are networked together.
(A) batch (B) multiprocessor (C) clustered (D) distributed
30. (2 points) The process is in state if it is waiting to be assigned to a processor.
(A) new (B) running (C) waiting (D) ready
31. (2 points) Context switch saves the current context of the current process in its
(A) stack (B) heap (C) PCB (D) queue
32. (2 points) In, the sending process is blocked until the message is received.
(A) synchronous send (B) asynchronous send (C) synchronous receive (D) asynchronous receive
33. (2 points) In a multi-threaded process, threads do not share
(A) code (B) data (C) stack (D) files
34. (2 points) In the multi-threading model, if one thread blocks, all other threads will block.
(A) one-to-many (B) one-to-one (C) many-to-one (D) many-to-many
35. (2 points) cancellation allows the target thread to periodically check if it should be cancelled.
(A) Asynchronous (B) Deferred (C) Thread pool (D) Implicit thread
36. (2 points) The is a segment of code, in which the process may be accessing and updating shared data.
(A) entry section (B) exit section (C) critical section (D) remainder section
37. (2 points) is a deadlock condition and it means that at least one resource must be held in a non-shareable mode.
(A) Mutual exclusion (B) Hold and wait (C) No preemption (D) Circular wait
38. (2 points) Deadlock ensure that at least one of the necessary conditions for a deadlock to occur cannot hold.
(A) avoidance (B) prevention (C) detection (D) recovery
39. (2 points) is a non-preemptive CPU scheduling algorithm.
(A) SJF (B) Priority (C) FCFS (D) RR
40. (2 points) In CPU scheduling, the waiting time can be calculated by subtracting the from the turnaround time.
(A) response time (B) arrival time (C) completion time (D) burst time
41. (2 points) The priority-based CPU scheduling algorithm suffers from the starvation problem and one solution is
(A) feeding-based recovery (B) aging (C) synchronization (D) preemption
42. (2 points) The algorithm allocates the smallest hole in memory that is big enough to hold the process.
(A) first-fit (B) best-fit (C) worst-fit (D) last-fit
43. (2 points) occurs when the allocated memory is slightly larger than the requested memory.
(A) Overflow (B) Compaction (C) Internal fragmentation (D) External fragmentation

44. (2 points) is a memory allocation approach that does not suffer from external fragmentation.
(A) Contiguous allocation (B) Paging (C) Segmentation (D) Segmentation with paging
45. (2 points) Referencing a page that is not currently in memory results in
(A) a deadlock (B) a page fault (C) page starvation (D) page fragmentation
46. (2 points) If there is no frame in memory, a algorithm can be used to select a victim frame.
(A) page-fault (B) page-fragmentation (C) page-replacement (D) page-starvation
47. (2 points) In frame allocation, the number of memory frames allocated to a process depends on its size.
(A) equal (B) priority (C) dynamic (D) proportional
48. (2 points) processes information in the file in order, one record after the other.
(A) Sequential access (B) Direct access (C) Random access (D) Relative access
49. (2 points) The records information (e.g. name, location, size, and type) for all files on a volume.
(A) device directory (B) volume scanner (C) file locator (D) random-access list
50. (2 points) To condense the length of the file access-control list, many systems classify users into owner, group, and
(A) cooperator (B) universe (C) coordinator (D) subgroup

Best Wishes

Dr. Mohamed Handosa

Operating Systems Fundamentals Final Exam

50 Questions (100 Points) - Model (1)

...

* Required

1

Write your name *

Enter your answer

2

An operating system consists of and system programs.
(2 Points)

- a kernel
- application programs
- hardware programs
- firmware programs

3

..... locates the kernel, load it into memory, and start its execution.
(2 Points)

- The operating system
- The bootstrap program
- The loader
- The dispatcher

4

..... refers to reading an instruction from memory and storing it in the CPU's instruction register.
(2 Points)

- fetch
- decode
- execute
- encode

5

..... ensures that an update to a cache is reflected immediately in other caches.
(2 Points)

- Cache update
- Cache reflection

Cache decoding

Cache coherency

6

..... in multiprocessor systems means that failure of one processor will not halt the system.
(2 Points)

Increased throughput

Economy of scale

Increased reliability

Workflow

7

In, one node is in hot standby mode monitoring the active server.
(2 Points)

asymmetric clustering

symmetric clustering

asymmetric processing

symmetric processing

8

In dual mode operation, privileged instructions can execute only in

(2 Points)

asymmetric mode

application mode

kernel mode

user mode

9

In, the CPU switches between jobs so frequently to allow for multitasking.
(2 Points)

batch systems

multiprogramming systems

timesharing systems

bulk systems

10

..... is a collection of physically separate computer systems that are networked together.
(2 Points)

A distributed system

A cluster system

A multiprocessor system

A multicore system

11

..... delivers computing as a service and users pay based on usage.
(2 Points)

- cloud computing
- peer-to-peer computing
- client-server computing
- batch computing

12

..... has well defined, fixed time constraints.
(2 Points)

- A distributed system
- A single-processor system
- A multiprocessor system
- A real-time system

13

The operating system provides application programmers with to invoke services.
(2 Points)

- DMA
- RPC
- IPC
- API

14

..... system calls support open, close, read, write, reposition file operations.
(2 Points)

- Process control
- File management
- Device management
- Information maintenance

15

..... system calls support get time/date and set time/date operations.
(2 Points)

- Process control
- File management
- Device management
- Information maintenance

16

Using the makes the OS difficult to implement and extend.
(2 Points)

- monolithic Approach
- layered Approach

micro-kernel Approach

hybrid approach

17

Using the removes all nonessential components from the kernel and implements them as system programs.

(2 Points)

monolithic Approach

layered Approach

micro-kernel Approach

hybrid approach

18

In a process, the contains the temporary variables.

(2 Points)

text section

data section

heap section

stack section

19

A process is said to be in a state if it is being created.

(2 Points)

new

running

waiting

ready

20

Context switch saves the current context of the current process into its

(2 Points)

IPC

RPC

DMA

PCB

21

A process shares data with other executing processes.

(2 Points)

independent

cooperating

batch

interactive

22

..... contains processes waiting for a certain event to occur.
(2 Points)

- ready queue
- wait queue
- device queue
- system queue

23

..... is a process that can receive messages from mailbox.
(2 Points)

- user
- owner
- sender
- receiver

24

In addressing, both sender and receiver processes must name each other.
(2 Points)

- multicore
- cluster
- asymmetric
- symmetric

25

..... involves the distribution of tasks across multiple cores.
(2 Points)

- Data parallelism
- Data distribution
- Task parallelism
- Task distribution

26

In the one-to-one model, thread management is done by

- the operating system
- a thread library
- RPC mechanisms
- IPC mechanisms

27

In the, the entire process will block if a thread makes a blocking system call.
(2 Points)

- many-to-one

- one-to-one
- many-to-many
- one-to-many

28

..... is a synchronous version of the thread pool.
(2 Points)

- Blocking send
- Blocking receive
- Implicit fork-join
- Explicit fork-join

29

In cancellation, the target thread periodically checks whether it should terminate.
(2 Points)

- Deferred
- Cascading
- Synchronous
- Asynchronous

30

The is a segment of code, in which the process may be accessing and updating shared data.
(2 Points)

- entry section
- exit section
- critical section
- remainder section

31

..... is a deadlock condition and it means that at least one resource must be held in a non-shareable mode.
(2 Points)

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

32

Deadlockensure that at least one of the necessary conditions for a deadlock to occur cannot hold.
(2 Points)

- avoidance
- prevention
- detection
- recovery

33

..... instructions such as Test-and-Set execute as one uninterruptible unit.
(2 Points)

- Blocking
- Privileged
- Automatic
- Atomic

34

A binary semaphore behaves similarly to

(2 Points)

- mutex locks
- race condition
- waiting locks
- signal locks

35

Process execution ends with a

(2 Points)

- device burst
- I/O burst
- CPU burst
- operating system burst

36

The gives control of the CPU to the process selected for execution.
(2 Points)

- CPU scheduler
- dispatcher
- bootstrap program
- CPU register

37

..... scheduling allows for stopping a running process before it completes its CPU burst.
(2 Points)

- preemptive
- non-preemptive
- round-robin
- asynchronous

38

Question

Problem 1

Consider the following set of processes with the specified arrival time, priority, and length of CPU burst given in milliseconds:

Process	Arrival Time	Burst Time	Priority
P_1	0	5	2
P_2	2	8	3
P_3	4	4	3
P_4	7	1	1

Enter your answer

39

In problem 1, if preemptive priority scheduling is used, the turnaround time of P_2 will be
(2 Points)

- 18
- 9
- 11
- 1

40

In problem 1, if preemptive priority scheduling is used, the waiting time of P_2 will be
(2 Points)

- 1
- 13
- 7
- 0

41

In problem 1, if preemptive priority scheduling is used, the response time of P_2 will be
(2 Points)

- 3
- 1
- 0
- 2

42

The contains the length of the addresses allocated to the process.
(2 Points)

- base register
- relocation register
- limit register
- page-table base register

43

..... is a contiguous allocation method that produces the smallest leftover hole.
(2 Points)

- First Fit
-

Best Fit

Worst Fit

Next Fit

44

Paging divides the physical memory into blocks of the same size called
(2 Points)

pages

frames

blocks

segments

45

Memory compaction is a possible solution for the problem.
(2 Points)

external fragmentation

internal fragmentation

swapping

segmentation

46

..... occurs when the allocated memory is slightly larger than the requested memory.
(2 Points)

Overflow

Compaction

Internal fragmentation

External fragmentation

47

Referencing a page that is not currently in memory results in
(2 Points)

a deadlock

a page fault

page starvation

page fragmentation

48

If there is no frame in memory, a algorithm can be used to select a victim frame.
(2 Points)

page-fault

page-fragmentation

page-replacement

page-starvation

49

In frame allocation, the number of memory frames allocated to a process depends on its size.
(2 Points)

- equal
- priority
- dynamic
- proportional

50

..... processes information in the file in order, one record after the other.
(2 Points)

- Sequential access
- Direct access
- Random access
- Relative access

51

The records information (e.g. name, location, size, and type) for all files on a volume.
(2 Points)

- device directory
- volume scanner
- file locator
- random-access list

52

To condense the length of the file access-control list, many systems classify users into owner, group, and
(2 Points)

- cooperator
- universe
- coordinator
- subgroup

Submit

Never give out your password. [Report abuse](#)

This content is created by the owner of the form. The data you submit will be sent to the form owner. Microsoft is not responsible for the privacy or security practices of its customers, including those of this form owner. Never give out your password.

Powered by Microsoft Forms |

The owner of this form has not provided a privacy statement as to how they will use your response data. Do not provide personal or sensitive information.

| [Terms of use](#)



Operating System Fundamentals Exam - Intake 42

Allowed time 60 minutes Tuesday 16/11

Notes:

- The exam includes 50 questions: 10 (True/False) and 40 (Multiple Choices) in ONE hour
- It is Forbidden to use any electronic aided device (Mobile, Calculator, Organizer, etc.)

...

* Required

1

Enter Your Full Name *

Enter your answer

2

Select Your Track Name *

- Enterprise & Web Development (Java)
- Mobile Application Development (Native)

3

True or False: By using the virtual memory, the logical address space can be much larger than physical address space

(2 Points)

True

False

4

True or False: The System calls are calling for hardware interrupts

(2 Points)

True

False

5

True or False: Bootstrap program is loaded after power-up or reboot

(2 Points)

True

False

6

True or False: Any process may pass data to other process

(2 Points)

True

- False**

7

True or False: Open(Ni) – as a File operation- means; move the content of entry Ni in memory to directory structure on disk

(2 Points)

- True

- False**

8

True or False: Deadlock is a set of blocked processes each holding a resource and waiting to acquire a resource held by another process out of the set.

(2 Points)

- True**

- False

9

True or False: Cloud computing can be defined as a new style of computing in which dynamically scalable and virtualized resources are provided as a network service.

(2 Points)

- True**

- False

10

True or False: Operating System Protection refers to a mechanism for controlling access by programs, or users to system resources
(2 Points)

True

False

11

True or False: The user program deals with logical addresses; it never sees the real physical addresses.
(2 Points)

True

False

12

True Or False: Any I/O Controller moves data between any I/O device and other I/O device
(2 Points)

True

False

13

Process	Arrival Time	Burst Time	Priority
P1	0.0	5	4
P2	1.0	4	2
P3	4.0	6	1
P4	5.0	5	3

You are given that information about some of processes which are ready to be running with a CPU in an Operating System:

In case of using Round Robin scheduling algorithm (with quantum 5), the response time for processes P1, P2, P3, P4 respectively are:

(2 Points)

- a. 0, 5, 10, 14
- b. 0, 3, 6, 8
- c. 5, 9, 19, 20
- d. 0, 4, 5, 9

14

The process which spend most of its time doing I/O requests is called:

(2 Points)

- a. CPU-Bound Process
- b. Active Process.
- c. Passive Process.
- d. I/O-Bound Process

15

Select the file allocation Methods from the following:
(2 Points)

- a. Contiguous Allocation
- b. Linked Allocation
- c. Indexed Allocation
- d. Discrete Allocation

16

Some of the main reasons of processes cooperation are:
(2 Points)

- a. Data sharing.
- b. Modularity.
- c. Speedup the performance.
- d. All of the above.

17

29. The requirements of resources for any process are:
(2 Points)

- a. CPU Burst time
- b. Size of needed memory
- c. The needed I/O devices
- d. The needed files

- e. None of the above

18

Select the file access methods from the following:

(2 Points)

- a. Random Access
- b. Sequential Access
- c. Direct Access
- d. None of the above

19

The advantages of Multi-processing system:

(2 Points)

- a. Increase throughput
- b. Increase reliability
- c. If CPU fail, other CPU's pick up work
- d. All of the above

20

Computer System Components are:

(2 Points)

- a. Hardware
- b. Application Programs



c. Operating System

d. Users

e. All of the above

21

The base register is a register which include:

(2 Points)

a. The first physical address of the currently running program

b. The first logical address of the currently running program

c. The first physical address of the just finished program

d. The first logical address of a waiting program

22

All the following are directory operations except:

(2 Points)

a. Read from a File

b. Search for a file.

c. Delete a file.

d. Rename a file

23

The types of deployment models of cloud – way of access to the cloud- are:

(2 Points)



a. Private b. Public c. Hybrid d. Community

24

Ready Queue is:

(2 Points)

- a. A set of all processes in the system
- b. A set of all processes residing in main memory, ready and waiting to execute.
- c. A set of processes waiting for an I/O device.
- d. A set of terminated processes

25

The data file types are:

(2 Points)

- a. Numeric
- b. Character
- c. Binary
- d. All of the above
- e. None of the above

26

We can describe the Process Control Block (PCB) as:

(2 Points)

- a. It is just using by operating system designers for design purpose
- b. A way to transfer a process between different types of operating systems
- c. The way of represent and control a process in the operating system
- d. type of addressing

27

Select the system calls categories from the following:

(2 Points)

- a. File management
- b. Device Management
- c. Process control
- d. Hardware maintenance
- e. Communications

28

Short-term schedulers used to:

(2 Points)

- a. Select which job to be putting into ready queue
- b. Select which job to be running next.
- c. Release all processes from Operating System.

- d. All of the above

29

One of the scheduling optimization ways is minimizing:

(2 Points)

- a. Turnaround time of each process.
- b. Average waiting time for processes.
- c. Response time for each process.
- d. All of the above.

30

The main function of the process dispatcher:

(2 Points)

- a. Gives control of the CPU to the selected process to be run by the short-term scheduler.
- b. Takes control of the CPU from the selected process to be run by the short-term scheduler.
- c. Release all the processes from ready queue.
- d. None of the above.

31

Any process may be at one of the following states:

(2 Points)

- a. ready
- b. running

c. interrupting d. waiting

32

The meaning of preemptive CPU scheduling schema is:

(2 Points)

 a. Waiting for another process. b. Bring a process from ready queue. c. Process is releasing the CPU before finishing its execution to execute another process. d. None of the above.

33

For any modern time-sharing operating system, select the common available process operations which may be managed:

(2 Points)

 a. Creation/termination b. Memory compaction c. Open/close file d. Going to trap module

34

Select the advantages of virtual machines from the following:

(2 Points)

 a. Run operating systems where the physical hardware is unavailable

- b. Emulate more machines than are physically available
- c. Enhance the memory management performance
- d. Run legacy systems

35

Device Queue is
(2 Points)

- a. A set of all processes in the system
- b. A set of all processes residing in main memory, ready and waiting to execute.
- c. A set of processes waiting for an I/O device.
- d. A set of terminated processes

36

Process	Arrival Time	Burst Time	Priority
P1	0.0	5	4
P2	1.0	4	2
P3	4.0	6	1
P4	5.0	5	3

You are given that information about some of processes which are ready to be running with a CPU in an Operating System:

In case of using Round Robin scheduling algorithm (with quantum 5), the process P4 ends its work at time unit:
(2 Points)

- a. 5.0
- b. 19.0

c. 20.0 d. 9.0

37

Which of the following are the deadlock Characterizations?
(2 Points)

- a. Mutual Exclusion
- b. Hold without wait
- c. Circular wait
- d. No preemption resources

38

Operating System Objectives are:
(2 Points)

- a. Execute User Programs
- b. Hardware Protection
- c. Efficiency
- d. File Conversion

39

Process	Arrival Time	Burst Time	Priority
P1	0.0	5	4
P2	1.0	4	2
P3	4.0	6	1
P4	5.0	5	3

You are given that information about some of processes which are ready to be running with a CPU in an Operating System:

In case of using First Come First Served (FCFS) scheduling algorithm, the average waiting time for the above situation is:

(2 Points)

- a. 19/4.
- b. 20/4.
- c. 21/4.
- d. 18/4.

40

Process	Arrival Time	Burst Time	Priority
P1	0.0	5	4
P2	1.0	4	2
P3	4.0	6	1
P4	5.0	5	3

You are given that information about some of processes which are ready to be running with a CPU in an Operating System:

In case of using Non-preemptive Shortest Job First (SJF) scheduling algorithm, the process P2 starts at time unit:

(2 Points)

- a. 1.0
- b. 4.0
- c. 5.0
- d. 9.0

41

Advantages of using virtual memory are:
(2 Points)

- a. Logical address space can therefore be much larger than physical address space
- b. Allows address spaces to be shared by several processes
- c. Allows for more efficient process creation
- d. Start the new process very fast

42

Select the most appropriate statement to describe the relations between a child process and its parent process:

(2 Points)

- a. OS does not allow a child process to continue after termination of its parent.
- b. OS allows a child process to be created before its parent.
- c. OS allows a child process to be created without parent process.
- d. There is no relation between a child process and its parent process.

43

How to satisfy a request of size n from a list of free holes in main memory- in Dynamic Storage-Allocation technique:

(2 Points)

- a. First-fit
- b. Best-fit
- c. Worst-fit

- d. All of the above.

44

The Dispatch latency is:

(2 Points)

- a. Time to get a process from ready queue to be running in CPU.
- b. Time it takes for the dispatcher to stop one process and start another running.
- c. Time to remove all the processes from ready queue.
- d. None of the above.

45

In memory management, compaction is an operation to reduce:

(2 Points)

- a. Internal Fragmentation
- b. External Fragmentation
- c. Overhead allocation problem
- d. None of the above

46

Client-Server system is a type of:

(2 Points)

- a. Multi-Processor systems
- b. Desktop Systems



c. Clustered Systems d. Distributed System

47

Select all the available Cloud-Computing service models from the following:
(2 Points)

 a. Infrastructure As A Service (IAAS) b. Network As A Service (NAAS) c. Database As A Service (DAAS) d. Social-Media As A Service (SAAS)

48

Which of the following are file attributes?
(2 Points)

 a. File Type. b. File Could be Deleted. c. File Location. d. File Protection

49

The types of addressing in a computer system:
(2 Points)

 a. Physical address

b. Loaded address

c. Logical address

d. None of the above

50

Traps or exceptions are happening because:

(2 Points)

a. Error, division by zero or invalid memory access

b. A process need to call an API of its operating system

c. A process communicates another process

d. All of the above

51

Some of Scheduling Algorithms are:

(2 Points)

a. First Come First Serviced.

b. Ideal Job First.

c. Priority.

d. Round Robin

52

Process	Arrival Time	Burst Time	Priority
P1	0.0	5	4
P2	1.0	4	2
P3	4.0	6	1
P4	5.0	5	3

You are given that information about some of processes which are ready to be running with a CPU in an Operating System:

In case of using preemptive Priority scheduling algorithm, the waiting time for process P3 is:

(2 Points)

- a. 0
- b. 7
- c. 10
- d. 17

Submit

Never give out your password. [Report abuse](#)

This content is created by the owner of the form. The data you submit will be sent to the form owner. Microsoft is not responsible for the privacy or security practices of its customers, including those of this form owner. Never give out your password.

Powered by Microsoft Forms |

The owner of this form has not provided a privacy statement as to how they will use your response data. Do not provide personal or sensitive information.

| [Terms of use](#)