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 preemptive Priority scheduling algorithm, the waiting time for process P3 is:
(2 Points)

- (●) a. 0
- ( ) b. 7
- ( ) c. 10
- ( ) d. 17

14

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.

15

Select the file access methods from the following:
(2 Points)

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

16

Select the system calls categories from the following:
(2 Points)

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

17

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

- [x] d. type of addressing

18

Some of Scheduling Algorithms are:
(2 Points)

- [x] a. First Come First Serviced.
- [ ] b. Ideal Job First.
- [x] c. Priority.
- [x] d. Round Robin

19

In memory management, compaction is an operation to reduce:
(2 Points)

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

20

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

a, b, c

- [x] a. Contiguous Allocation
- [x] b. Linked Allocation

- [x] c. Indexed Allocation
- [ ] d. Discrete Allocation

21

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

22

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

- [x] a. CPU Burst time
- [x] b. Size of needed memory
- [x] c. The needed I/O devices
- [x] d. The needed files
- [ ] e. None of the above

23

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

24

Client-Server system is a type of:
(2 Points)

- a. Multi-Processor systems
- b. Desktop Systems
- c. Clustered Systems
- d. Distributed System

25

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

- [x] a. File Type.
- [ ] b. File Could be Deleted.
- [x] c. File Location.
- [x] d. File Protection

26

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.

27

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.

28

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

- [x] 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.

29

Computer System Components are:
(2 Points)

- [ ] a. Hardware
- [ ] b. Application Programs
- [ ] c. Operating System
- [ ] d. Users
- [x] e. All of the above

30

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

31

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

32

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.

33

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.

34

Operating System Objectives are:
(2 Points)

- ☑ a. Execute User Programs
- ☑ b. Hardware Protection
- ☑ c. Efficiency

d. File Conversion

35

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

36

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

37

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

38

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

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

39

Select the advantages of virtual machines from the following:
(2 Points)

- [x] a. Run operating systems where the physical hardware is unavailable
- [x] b. Emulate more machines than are physically available
- [ ] c. Enhance the memory management performance
- [x] d. Run legacy systems

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 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.

41

The types of deployment models of cloud – way of access to the cloud- are:
(2 Points)

- [x] a. Private
- [x] b. Public
- [x] c. Hybrid
- [x] d. Community

42

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

43

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

44

The data file types are:
(2 Points)

- a. Numeric
- b. Character
- c. Binary
- d. All of the above

e. None of the above

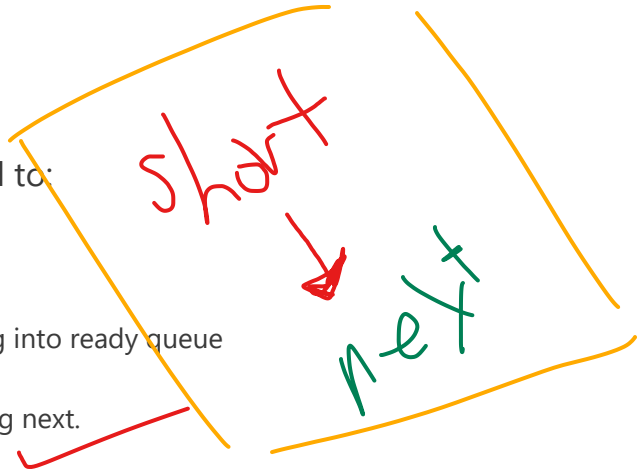
45

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

46

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

47

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

- [x] a. Mutual Exclusion
- [x] b. Hold without wait

- [x] c. Circular wait
- [x] d. No preemption resources

48

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

- [x] a. Physical address
- [ ] b. Loaded address
- [x] c. Logical address
- [ ] d. None of the above

49

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

50

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.

51

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)

52

Any process may be at one of the following states:
(2 Points)

a. ready

b. running

- [ ] c. interrupting
- [x] d. waiting

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