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.)

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* 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)

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

- [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

18

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

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

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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