



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 |
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| 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 |
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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 |
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| 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 |
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| 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

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