G-2/228/21 Roll No. ....

M.Sc. II Semester Examination, 2021
INFORMATION TECHNOLOGY
Paper IV
(Operating System with Lunus as case studies)

Time : 3 Hours]   [Max. Marks : 100
                                              [Min. Marks : 40

Note : *All questions are compulsory. Question Paper comprises of 3 sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION A   1×10=10

(Objective Type Questions)

Choose the correct answer :

1. BIOS is used :

(a) By compiler

(b) By operating system

(c) By application software

(d) By interpreter

2. What is an operating system ?

(a) Collection of program that manages hardware resources

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(b) System service provider to the application programs

(c) Interface between the hardware and application programs

(d) All of the mentioned

3. The number of processes completed per unit time is known as ....

(a) Capacity   (b) Output

(c) Throughput   (d) Efficiency

4. What is the ready state of a process ?

(a) When process is scheduled to run after some execution.

(b) When process is unable to run until some task has been completed.

5. What is interprocess communication ?

(a) Communication within the process

(b) Communication between two process

(c) Communication between two thread of same process

(d) None of the mentioned

6. To avoid deadlock :

(a) There must be a fixed number of resources to allocate

(b) Resources allocation must be done only once

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(c) All deadlocked processes must be aborted

(d) Inversion technique can be used

7. The address generated by the CPU is referred to as ....

(a) Physical address

(b) Logical address

(c) Neither physical nor logical

(d) None of the mentioned

8. Swapping requires a ....

(a) Monitor   (b) Backing store

(c) Mother board   (d) Keyboard

9. To create a file ....

(a) Allocate the space in file system

(b) Make an entry for new file in directory

(c) Allocate the space in file system and make an entry for new file in directory

(d) None of the mentioned

10. Which of the following is the least secure method of authentication ?

(a) Key card   (b) Fingerprint

(c) Retina pattern   (d) Password

SECTION B   6×5=30

(Short Answer Type Questions)

Note : *Answer the following questions in 250 words.*

Unit-I

1. Discuss operating system as an abstract machine.

Or

Explain main functions of operating system.

Unit-II

2. Explain various states of a process.

Or

What is multithreading ? Explain with example.

Unit-III

3. Write the necessary condition for deadlock.

Or

What is Semaphore ? Mention its properties.

Unit-IV

4. List the steps needed for page replacement.

Or

Write the difference between internal and external fragmentation.

Unit-V

5. Write note on file attributes.

Or

What are the various file accessing methods ?

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SECTION C   12×5=60

(Long Answer Type Questions)

Note : *Answer the following questions in 500 words.*

Unit-I

1. What is spooling ? Explain with suitable example. Write the advantages and disadvantages of spooling.

Or

Write note on the following :

(a) Evalution of operating system,

(b) Real time system.

Unit-II

2. Explain scheduling queue with neat diagram and appropriate example.

Or

Demonstrate Round Robin CPU sheduling algorithm with suitable example.

Unit-III

3. What is Deadlock ? Explain the techniques to prevent the deadlock.

Or

Explain competing and co-operating process. What are the advantages of inter-process communication ?

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Unit-IV

4. Explain various types of memory allocation techniques with advantages, disadvantages and example.

Or

What is Virtual Memory ? Discuss the benefits of virtual memory technique.

Unit-V

5. Compare and contrast the terms external and operational security in the context of operating system.

Or

Discuss the different file allocation method with suitable example.

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