Kingdom of Saudi Arabia
Ministry of Education
College of Computer
Department of Computer Science

بسم الله الرحمن الرحيم

Qassim University — جامعة القصيم

المملكة العربية السعودية
وزارة التعليم
كلية الحاسب
قسم علوم الحاسب

Course: CS222 "Operating Systems"
Semester 432- 2021/ 2022

Mark 19½ **/20**

Duration: 1 hour
Day 19/04/2022

~~7~~ 7 4½

Student Name: [redacted] **Student ID:** [redacted]

For Instructor use only

Outcomes	1	2	3	4	5	6
Course covering Outcomes	√				√	

Question	1	2	3	4
Covered Outcome	1	1	1	5
Allocated mark	5	5	5	5
Earned mark				

Total		
1	5	exam
15	5	20

Question 1, 1x5=5 Marks 5

Choose correct (best match) one of the four given answers:

1. **The process that is used to avoid programmed I/O for large data movement :**
   a. Direct Memory Access. b. The CPU
   c. The device driver d. The device controller.

2. **A fast disk that is large enough to accommodate copies of all memory images for all users is called :**
   a. Backing store. b. CPU scheduler
   c. The Processor. d. The hard disk.

3. **A collection of nodes containing information about all files:**
   a. CPU Structure. b. Segmentation.
   c. Directory Structure. d. Serialization.

4. **A Memory-management scheme that supports user view of memory is called:**
   a. Serialization b. Segmentation
   c. Paging d. Interprocess Communication

5. **Reduce interrupts by using large transfers, smart controllers, or polling leads to improve:**
   a. Perfomance. b. Security
   c. Maitainability . d. Protection.

Question 2, 1x5=5 Marks 5

Mark the below Statements True or False:

1. In a Nonblocking I/O, the process suspended until I/O completed. [F]
2. Subtleties of Input/Output devices is handled by device drivers. [T]
3. Program must be brought (from disk) into memory and placed within a process for it to be run. [T]
4. A file system must not be mounted before it can be accessed. [F]
5. A pair of base and limit registers define the logical address space. [T]

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Question 3, (2.5+2.5 respectively) =5 Marks

Short answer type questions:

1 List five operations performed on Directory? 4 1/2

Creat
List
Delet
traverse
?

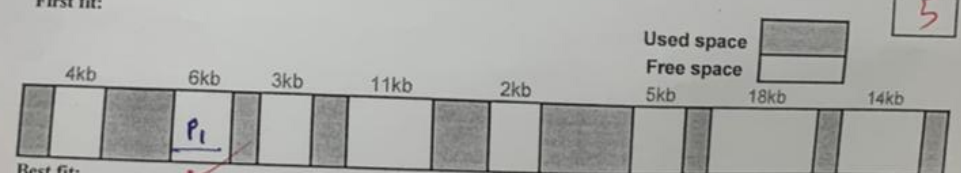
2. . Discuss the Base and Limit Registers??

Base: contain the smallest Phical address
Limit: contain the rang of Logical address
~~Pair of limit and base registers define logical address space~~

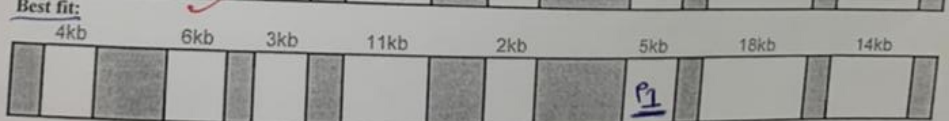
Question 4, =5 Marks

Apply the Dynamic Storage-Allocation method to allocate a suitable hole for the following process P1 of size 5 Kb. Determine the location of P1 using first fit, Best fit, and worst fit. 5

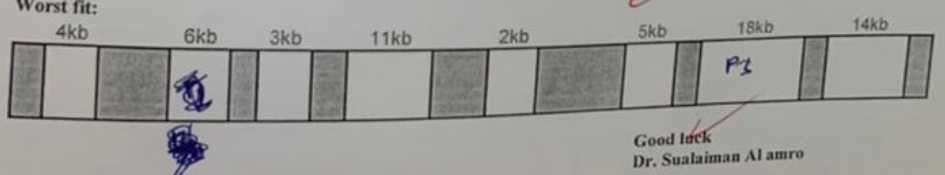
First fit:



Best fit:



Worst fit:



Good luck
Dr. Sualaiman Al amro

worst largest
best smallest
first first