

## REVIEW for EXAM - 01

### **1. Contents/Scope to be covered:**

Lecture #1 to #8

### **2. How to prepare:**

Read the textbook. Review my lecture slides posted on our website. Pay special attention to the summary page (usually page #3) in each lecture note which lists important keywords and questions.

### **3. Format:**

There will be 10-20 questions, some are essays, drawing diagrams, or multiple-choice(see below).

### **Examples of multiple-choice questions:**

1) What is the most important difference between the Main memory and the Secondary memory ?

- a) access to the processor
- b) reliability in using the CPU
- c) speed in running programs
- d) scalability of the memory

answer = a

2) Which statement from the following statements about "preemptive" and "non-preemptive" scheduling is true ?

- a) In "preemptive" scheduling most of processes are I/O bounded
- b) In "non-preemptive" scheduling the CPU keeps the assigned process unless it finishes or switches to the ready state
- c) In "preemptive" scheduling the I/O jobs are interrupted
- d) In "non-preemptive" scheduling the CPU keeps the assigned process unless it finishes or waits for an I/O job done

answer = d

3) A computer has a CPU, a monitor, a keyboard, and a running program. How many device queues are there (the OS will create) in the system ?

- a) one (for all)
- b) two
- c) three
- d) four (a queue for each)

answer = b

### Examples of essay questions:

4) List the main computer hardware components and describe their functions.

Answer:

-CPU/processor: for executing instructions

-Memory: for storing processes and their data

-I/O devices: for inputting/outputting information for computer/programs

5) What is bootstrap program ?

Answer:

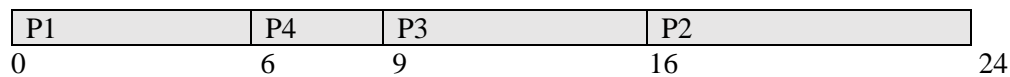
It's a program that's a part of OS which help to initialize hardware devices, set-up and starts the system.

6) Given information about processes:

<u>Process</u>	<u>Arrival Time</u>	<u>Burst Time</u>
$P_1$	0.0	6
$P_2$	2.0	8
$P_3$	4.0	7
$P_4$	5.0	3

Define the CPU schedule (in Gant chart) for these processes using SJF method and calculate the average waiting time.

Answer:



- Total Waiting time =  $P1(0-0)+P2(16-2)+P3(9-4)+P4(6-5) = 0+14+5+1 = 20$
- Average waiting time =  $20/4 = 5$

### Example of draw-diagrams questions:

7) Draw a diagram to show the Storage-Device Hierarchy:  
(page 2.17)

