



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SECR2043-07 OPERATING SYSTEMS

EXERCISE 1

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Even number IC & Odd number Matric Card – 1.4 to 1.6

1.4 Keeping in mind the various definitions of *operating system*, consider whether the operating system should include applications such as web browsers and mail programs. Argue both that it should and that it should not, and support your answers.

It should because these two features are needed by users this era. Also, compiling applications with operating systems may provide better performance in certain areas. Meanwhile, it should not because it may cause the operating system to be loaded that may affects its performance.

1.5 How does the distinction between kernel mode and user mode function as a rudimentary form of protection (security) system?

Certain instructions can be executed only when the CPU is in kernel mode. For example, controlling over when interrupts happen could be enabled or disabled. This also applies on the hardware that only can be accessed when a program is in kernel mode. Hence, the CPU is limited capability when executing in user mode.

1.6 Which of the following instructions should be privileged?

- a. Set value of timer.
- b. Read the clock.
- c. Clear memory.
- d. Issue a trap instruction.
- e. Turn off interrupts.
- f. Modify entries in device-status table.
- g. Switch from user to kernel mode.
- h. Access I/O device

- **Set value of timer**
- **c. Clear memory**
- **e. Turn off interrupts**
- **f. Modify entries in device-status table**
- **h. Acces I/O device.**