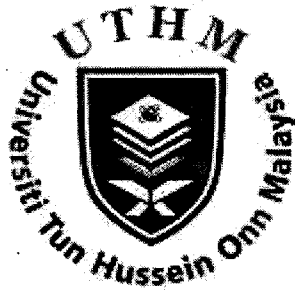


CONFIDENTIAL



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2011/2012**

COURSE NAME : BASIC OF OPERATING SYSTEM
COURSE CODE : DAT10303
PROGRAMME : 2 DAT
EXAMINATION DATE : MARCH 2012
DURATION : 2 ½ HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

CONFIDENTIAL

- Q1**
- (a) Define operating system.
(4 marks)
 - (b) Illustrate a schematic diagram of an operating system.
(2 marks)
 - (c) Explain each layer of an operating system you have illustrated in **Q1(b)** above.
(6 marks)
 - (d) Explain how multiprogramming increases efficiency of a single CPU system.
(2 marks)
 - (e) Explain **THREE (3)** advantages of multitasking OS.
(6 marks)
- Q2**
- (a) Explain Interrupt-driven I/O.
(4 marks)
 - (b) Explain the working process of Programmed I/O.
(4 marks)
 - (c) Illustrate a diagram of process state.
(2 marks)
 - (d) Explain the operation of a process state you have drawn in **Q2(c)** above.
(6 marks)
 - (d) Explain the differences between process stack and queues.
(4 marks)

- Q3** (a) Explain the following addressing management scheme techniques;
- (i) Dynamic memory addressing (2 marks)
 - (ii) Virtual memory addressing (2 marks)
 - (iii) Physical memory addressing (2 marks)
- (b) Explain the operation of memory address binding. (4 marks)
- (c) Illustrate a schematic diagram of the following memory addressing. Indicate based and limit memory address if needed.
- (i) Paging memory addressing scheme (2 marks)
 - (ii) Dynamic relocation addressing scheme (2 marks)
 - (iii) Swapping memory addressing scheme (2 marks)
- Q4** (a) Explain the difference between the following CPU process scheduling algorithms;
- (i) First-come first serve and Shortest job first (4 marks)
 - (ii) Preemptive Shortest job first and Round robin (4 marks)

- (b) Given the following process burst and job priority; illustrate a Gantt chart and calculate the average waiting time for each of the following algorithms.

Process	burst time (millisecond)	Job priority
P1	13	4
P2	4	1
P3	22	3
P4	16	2
P5	12	5

- (i) Shortest job first (4 marks)
- (ii) Round robin (4 marks)
- (iii) Priority based (4 marks)
- (iv) Non-preemptive Round robin (4 marks)

- Q5**
- (a) Explain why file type extension is important in operating system.
(4 marks)
 - (b) Explain **THREE (3)** common file access methods.
(6 marks)
 - (c) Explain why File access control and protection should be integrated in operating system.
(4 marks)
 - (d) Explain why different types of operation must be controlled in file systems.
(4 marks)
 - (e) List **TWO (2)** most common file operations and explain each of them.
(2 marks)