UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2014/2015

COURSE NAME	:	**BASIC OPERATING SYSTEM**
COURSE CODE	:	**DAT 10303**
PROGRAMME	:	**1 DAT**
EXAMINATION DATE	:	**DECEMBER 2014/JANUARY 2015**
DURATION	:	**2 1/2 HOURS**
INSTRUCTIONS	:	ANSWER **FOUR (4)** QUESTIONS FROM FIVE(5) QUESTIONS.

THIS QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

Q1 Calculate the average waiting for the following process queue in table Q1.

Table Q1: Process queue

Process Id	Burst time (second)	Priority
P1	40	5
P2	20	3
P3	18	4
P4	16	2
P5	5	1

(a) FCFS

(5 marks)

(b) SJF

(5 marks)

(c) Pre-emptive SJF

(5 marks)

(d) Round robin. Let quantum time as 10 ms.

(10 marks)

Q2 (a) Explain the purpose of process control block (PCB).

(5 marks)

(b) Explain **FIVE**(5) PCB contents.

(5 marks)

(c) Illustrate the PCB work when process change.

(5 marks)

(d) Identify **THREE** (3) services offered by file management utility services.

(5 marks)

(e) Illustrate parent and child process fork and termination.

(5 marks)

Q3 (a) List **FIVE (5)** common process states.

(5 marks)

(b) Explain the cause of process state changes.

(5 marks)

(c) Differentiate between message passing and shared memory techniques in process communication.

(10 marks)

(d) Describe the purpose of safety and protection.

(5 marks)

Q4 (a) Explain how the interaction between user to system.

(5 marks)

(b) Discuss the importance of system calls.

(5 marks)

(c) Explain the purpose of Command Line Interface.

(5 marks)

(d) Differentiate how scheduling strategies decision between CPU bound and I/O bound approaches.

(10 marks)

Q5 (a) Explain symmetric communications.

(5 marks)

(b) Explain the purpose of memory protection.

(5 marks)

(c) Illustrate memory page replacement for a sequence of process in queue in **table Q5** below, let number of frame in physical memory is 3.

Table Q5: Process in queue

Process in queue	Process Id
1	7
2	0
3	2
4	3
5	4
6	0
7	3
8	2
9	7
10	4
11	0
12	2
13	3
14	7
15	4

(i) FIFO page replacement

(ii) Optimum page replacement

(iii) LRU page replacement

(15 marks)

- End of questions -