Tutorial 04
Memory management system

1) What is memory management? Distinguish between "*logical address space*" and "*physical address space*".

2) What is non-contiguous memory management? Briefly describe a non-contiguous memory management scheme you have studied on this course. You should use a diagram in your answer.

3) What is virtual memory? Give two advantages of it.

4) Briefly define "Best fit", "First fit", and "Worst fit" placement policies.

5) A dynamic partition memory system has at a given moment the following free partitions.
A new process of size 25k. Which free partition will be a allocated using each of the following separately:
   i) Best fit; ii) First fit
   iii) Worst fit iv) Next fit

Part #	size	Free Busy
1	20	F
2	15	F
3	40	F
4	60	F
5	10	F
6	25	F

6) What is thrashing in virtual memory systems?

7) i) Describe how relocatable dynamic partitions can improve memory usage. Use a diagram to help explain your answer.

   ii) How often does compaction need to be carried out in relocatable dynamic partition systems?

8) How does memory manager recognise whether two partitions are immediate neighbours in memory in order for them to be joined or merged together? Give example

9) Consider the following Reference-Bits field in the following job page table. Identify the page to be selected in each of the following cases:
LRU, MRU, Most Frequently used, Least Frequently used.

Page number	Reference-Bits after shifting
0	00010000
1	11101000
2	00001100
3	00111110
4	00000001