Course Code: CIT 752   *Time:* 3 hrs
Course Title: Operating System Concept
Course Credit Unit: 2
Instruction: Answer Question One (1) and other any four (4) questions.

1.   a)   Distinguish between a program and a process.   (4 marks)
        b)   What are the necessary and sufficient conditions for a deadlock to occur? (8 marks)
        c)   As a process executes, it changes state. With the aid of illustrative diagram, describe each of these states   (10 marks)

2   a)   Briefly explain the concept of deadlock. (2 marks)
        b)   List four different types of system calls and their purposes.   (10 marks)

3.   a)   List four different types of system calls and their purposes.   (10 marks)
        b)   Define dynamic memory allocation   (2 marks)

4   a)   Briefly state the activities of memory management   (4 marks)
        b)   List and briefly describe any two ways of handling deadlock   (4 marks)
        c)   What is thrashing? State three causes of thrashing.   (4 marks)

5   a)   Write short note on Translation Lookaside buffer   (6 marks)
        b)   State and describe the three memory partition selection algorithms (6 marks)

6.   a)   Differentiate between preemptive scheduling and non-preemptive scheduling. (4 marks)
        b)   Write short notes on the following techniques for I/O operations:
            i.   Programmed I/O   (4 marks)
            ii.   Interrupt-Driven I/O   (4 marks)