**KABARAK**                          **UNIVERSITY**

# UNIVERSITY EXAMINATIONS
## 2009/2010 ACADEMIC YEAR
## FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT & INFORMATION TECHNOLOGY

**COURSE CODE:  BMIT 227**

**COURSE TITLE: OPERATING SYSTEMS**

**STREAM:**          **Y2S2**

**DAY:**              **MONDAY**

**TIME:**             **2.00 – 5.00 P.M.**

**DATE:**             **02/08/2010**

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**INSTRUCTIONS:**

Answer Question **ONE** and Any **Other THREE**

**PLEASE TURNOVER**

**Question one: 40 marks**

a). Define an Operating system                                          (2 marks)

b). State and explain eight characteristics features of an operating system     (4 marks)

c). Differentiate between a thread and a process                        (3marks)

d). Explain the meaning of the following terms
    i.     **Throughput**
    ii.    **Swapping**
    iii.   **Starvation**                                          (6marks)

e).Discuss the four main types of operating system stating clearly where they are used
                                                                          (6 marks)

f) Distinguish between segmentation and dynamic partitioning           (3marks)

g).with the aid of a neat diagram, state and explain different process states     (5 marks)

h).State and explain different operating system services.              (5 marks)

i).What is meant by booting? Explain booting types                     (2 marks)

j). Explain in details three methods of recovering from a deadlock      (4 marks)

**Question two: 20 marks**

   a)  What is a deadlock? Explain concept of critical region and deadlock handling
                                                                       (7 marks)

   b)  Differentiate between multitasking and multiprogramming           (3 marks)

   c)  What is a scheduler? Explain types of schedulers citing exactly where each is best applicable.                                                       (7 marks)

   d)  State four benefits of threads                                 (3 marks)

**Question three: 20 marks**

a) Explain the main functions of the Operating System                    (8 marks)

b) Explain five factors to consider when choosing an operating system    (5 marks)

c) Define Process control block                                           (1 mark)

d) List six information items that can PCB contain.                       (3 marks)

e) Differentiate between sequential and batch processing                 (3 marks)


**Question four: 20 marks**

a)  Define a scheduling algorithm?                                       (2 marks)

b)  Explain the following scheduling algorithms:-

        i).FCFS
        ii).SRT
        iii).Round Robin
        iv).Priority scheduling

                                          (10 marks)

c)  Differentiate how UNIX and DOS handle directory/filing structures    (4 marks)


d) Describe how an operating system handles I/O devices.                  (3 marks)

e) What is a page fault?                                                  (1 mark)


**Question five: 20 marks**

a). Memory management is one of the major functions of the Operating system. Describe
    issues involved in the memory management.                         (8 marks)

b) Explain all the necessary conditions for a deadlock to occur.         (4 marks)

c) What is meant by paging? Discuss Demand Paging in details             (6 marks)

d). Why is Linux preferred in most organizations compared to windows     (2 marks)