ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Department of Computer Science)

WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Course: Operating System (3428)

Level: MBA-IT **Semester: Spring, 2014**
Total Marks: 100 **Pass Marks: 50**

ASSIGNMENT No. 1
(Unit 1-4)

Note: All questions are compulsory. Each question carries equal marks.

Q.1 a) What is meant by operating system? Define it in detail with the help of suitable examples.
b) Generally describe the characteristics of an operating system.

Q.2 Introduce the term "Processes" and also describe the "Classic IPC Problems" in detail

Q.3 a) What is difference between terms "files" and "directories"? Define it in detail with the help of different examples.
b) Explain the concept of "File System Implementation".

Q.4 a) What are the different functions of an operating system? Explain in detail.
b) Also explain the structure of an operating system.

Q.5 Write short notes on the following topics:
- Process Scheduling
- Virtual Memory
- Paging
- Swapping

ASSIGNMENT No. 2

(Unit 5-9)

Total Marks: 100 **Pass Marks: 50**

Note: All questions are compulsory. Each question carries equal marks.

Q.1 Explain the term "Deadlock". Also define Deadlock Detection and Deadlock Recovery with the help of different examples.

Q.2 What are those operating systems which have become very popular at the time of their releases? Name at least ten of them and also explain three popular operating systems in detail along with their important features.

Q.3 What is the difference between the terms "Network Operating System" and "Distributed Operating System"? Explain it in detail.

Q.4 Generally describe the principles of I/O hardware as well as principles of I/O Software.

Q.5 Write short notes on the following topics:

- UNIX
- Terminals
- Deadlock Prevention
- Protection Mechanisms

3428 Operating Systems

Credit Hours: 4 (4 + 0)

Recommended Book:
Modern Operating System 3rd Edition by Andrew S. Tanenbaum

Course Outline:

Unit No. 1 **Introduction**
What is an Operating System, History of Operating System, Operating system Concepts, Operating System Structure?

Unit No. 2 **Process**
Introduction to Processes, inter-Process Communication, Classic IPC Problems, Process Scheduling

Unit No. 3 **Memory Management**
Memory Management without Swapping or Paging, Swapping, virtual Memory, Page Replacement Algorithms

Unit No. 4 **File Systems**
Files, directories, File System Implementation, Security, protection Mechanisms

Unit No. 5 **Input/Output**
Principles of I/O Hardware, Principles of I/O Software, Disks, Clocks, Terminals

Unit No. 6 **Deadlock**
Resources, Deadlocks, Deadlock Detection, Deadlock Recovery, Deadlock Avoidance, Deadlock Prevention, Other issues

Unit No. 7 **An overview of Major Operating systems**
O/S2, UNIX, NT, OS/400, Windows

Unit No. 8 **Distributed Operating Systems**
Network Operating System, Distributed Operating System

Unit No. 9 **Case Studies**
UNIX, NT, Windows