KURUKSHETRA UNIVERSITY KURUKSHETRA
Course: B.Sc. (Hons) IT
Semester-IV

Paper Code: BSIT -405
Nomenclature: - Operating System-II
Max. Marks: 40+10*
Time: 3hrs.

Unit-I

Memory Management: Logical versus physical Address Space, Overlays, Swapping, Contiguous Memory Management: Single memory management, Fixed partition memory management, Variable Partition memory management, Non Contiguous Memory Management: Paging, H/W support for paging, protection & sharing, Segmentation, H/W support for segmentation, protection & sharing, Segmented Paging.

Unit-II

Virtual Memory: Introduction to Virtual Memory, Demand Paging, Page Replacement policies, Trashing, Cause of Thrashing.

Unit-III

File Management: File Concept, File Attributes, File Operations, File Types, Access methods, Directory Structure.
File System Implementation: File system structure, allocation methods, Free-space management, directory implementation, efficiency & performance, recovery, Directory systems & operations.

Unit-IV

Protection: Goals of Protection, Protection Mechanisms.
Security: The security problem, User Authentication, Program Threats, System Threads, Cryptography.
References:
1. Operating System Concepts John Wiley & Sons, Inc by Peterson & Silberschetz:
2. Operating Systems Tata McGraw Hill by Achyut S Godbole
3. Operating System Mc Graw Hill by Madnick & Donomen
4. Operating system by A.S. Tanenbaum

Note:
   1. Syllabus in each Theory Paper is divided in 4 units.
      I. A Student is required to attempt 5 questions in all.
      II. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
      III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
      IV.   All questions carry equal marks.
   2.   Use of simple calculator is permissible.
   3.   Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
   4.   Distribution of Marks: 40+10.
      * Each theory question paper will be of 40 marks of 3 hours duration and 10 marks in each theory paper are to be awarded through internal assessment in each semester.
   5. Work load – 3 periods per week per theory paper