GUJARAT UNIVERSITY

B.E. – 3nd Year (EC) 6TH sem

EC-606(c) Operating Systems (Elective-I)

O.S Question Bank

1	Define and explain following terms: (i) Authentication (ii) Mutual Exclusion (iii) Deadlock (iv) Segmentation
2	List the types of operating systems and explain any one in detail
3	Define Process. List the major events for creation of a process and explain them
4	What is PCB? Discuss its major fields.
5	Draw process state diagram for THREE states and explain all states.
6	Explain the classical thread model with its implementation strategies.
7	Discuss the Peterson's solution for the race condition with algorithm.
8	What is Semaphore? How can we achieve the synchronization using semaphore for producer – consumer problem?
9	Explain scheduling of process with shortest process next policy.
10	Establish the necessity for memory management. Explain the memory management with the use of Linked Lists.
11	How Resource Trajectories can be helpful in avoiding the deadlock?
12	Draw the block diagram for DMA. Explain the steps for DMA data transfer.
13	Differentiate Multi-Programming, Multi-tasking, Multiprocessing and Distributed Operating System.
14	Explain Client/Server & Virtual Machine Architecture of Operating System
15	What is Semaphore? Solve producer consumer problem with use of semaphore.
16	Explain Virtual Memory Management with Paging in Detail.
17	What is Dead lock? When it occurs? How to recover from it.
18	Explain Banker's Algorithm for Multiple Resources.
19	Explain various Page Replacement Algorithms with example.
20	Explain Implementation of File in Operating System.
21	Explain Swapping in Detail.
22	Explain following in brief: I. File system consistency. II. Elevator Algorithm
23	Explain Device Independent I/O software.
24	Explain different types of OS and also Explain different types of tasks done by OS.
25	What is process? What are the different types of states Of any process? Explain different data structures to handle process management.
26	Compare FIFO & LRU page replacement algorithm
27	Explain IPC Problem –Dining Philosopher Problem.
28	Explain IPC Problem – Readers & Writers Problem.
29	What is system call? What is interrupt? How it is handled by OS?
30	Explain Different RAID levels and also Disk arm scheduling algorithm.

31	What is critical section? What is Mutual exclusion? Explain Peterson's solution for mutual exclusion problem.
32	What is Virtual Memory? Explain Demand Paging.
33	Explain Context Switching. Discuss performance evaluation of FCFS (First Come First Serve) & RR (Round Robin) scheduling.
34	What is inode? What is boot block? What is Superblock? How they are used to handle file management system in OS? Which methods are used to improve performance of file management system in OS?
35	Compare Paging with segmentation.
36	Explain: Race conditions, Semaphore and Monitor.
37	Explain UMA and NUMA multiprocessors.
38	Explain functions of Kernel of Unix OS. Also explain various security measures in Unix file system. How keyboards and monitors are represents in Unix file system?
39	Explain SSTF and LOOK disk scheduling algorithms.
40	Explain the Trojan Horse and Trap doors program threats.