	SAHYADRI **COLLEGE OF ENGINEERING & MANAGEMENT** **MANGALURU** **DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING** **QUESTION BANK**
Course Title : **Operating Systems**	Course Code: **1**
	Sem : **IV**

MODULE - I

1. Define Operating System? Discuss its role with respect to user and system viewpoint
2. What are the OS operations? Explain.
3. Give the features of symmetric and asymmetric multiprocessing systems.
4. List and explain the advantages of Multi-Processor system.
5. Differentiate between direct and indirect inter process communication
6. Describe the actions an operating system takes to context switch between processes.
7. What is a process? With a state diagram, explain states of a process. Also write the structure of process control block / What do you mean by PCB? Where is it used? What are its contents? Explain./ What is a process? Draw and explain process state diagram.
8. Define IPC (Inter Process Communication). What are the different methods used for logical implementation of a message passing system?
9. Describe the implementation of IPC using shared memory and message passing.
10. Briefly explain the common classes of services provided by the various operating systems for helping the user and for ensuring the efficient operation of the system.
11. Explain Simple, Layered approach, Modules, Microkernels in detail.
12. What are virtual machines? Explain the benefit of creating virtual machines. Explain with examples. Explain with appropriate sketches, the architecture of VM Ware and JVM.
13. Explain Bootstrap Program.
14. Explain dual mode operation in OS with a neat block diagram.
15. What is OS? Explain multiprogramming and time sharing systems.
16. What are system calls? Briefly point out its types./ What are system calls? Explain different categories of system calls with example? / Explain how the System Calls handle the User Application.
17. Define Operating Systems and discuss its role from different perspectives.
18. List out different services of Operating Systems and Explain.
19. Explain the methods of Process Creation.
20. Explain the concept of virtual machines. Bring out its advantages.
21. Explain the difference between long term and short term and medium term schedulers.

22. Define IPC. What are different methods used for logical implementations of message passing systems.

MODULE-II

1. Explain the multithreading models.
2. Explain the different threading issues. / Illustrate the vaious issues in threading and explain signal handling in detail.
3. Explain different scheduling criteria that must be kept in mind while choosing different scheduling algorithms.
4. Differentiate between single threaded process and a multithreaded process. Illustrate the benefits of Multithreaded process.
5. Differentiate between:
    a. Process and a thread
    b. Short term and medium term schedulers
    c. User level and kernel level threads
    d. User mode and Kernel mode operations
6. Explain the benefits of multithreaded programming.
7. Discuss common ways of establishing relationship between user and kernel thread.
8. Explain multithreading models.
9. What is Thread? What is the need for multithreaded processes? Explain the major benefits of multi-threaded programming.
10. What are the different ways in which the Pthread terminates?
11. Explain Thread Pool with advantages.