

Visvesvaraya Technological University, Belagavi  
**CBCS Scheme: 2015-16**

MODEL QUESTION PAPER

**15EI/BM563**

**Fifth Semester Electronics & Instrumentation Engineering**

**Operating Systems**

Time: 3 Hrs

Max. Marks: 80

Note: Answer FIVE FULL Questions, selecting ONE FULL Question from each Module

Question Number	Question	Marks Allotted
	<b>Module -1</b>	
1 a	Explain about the components of modern computer system?	5
1 b	What is boot strap loader?	3
1 c	Explain the dual mode operation of an operating system.	8
	OR	
2 a	Explain the services offered by operating system.	8
2 b	Explain the working of system call.	4
2 c	How is layered structure advantageous over simple structure of operating system?	4
	<b>Module -2</b>	
3 a	Explain different process states and its transition with a neat diagram.	4
3 b	Explain message passing in inter process communications.	8
3 c	What are the benefits of multithreaded programming?	4
	OR	
4 a	Explain scheduling criteria used to compare scheduling algorithms.	5
4 b	Explain First come, First served and Round Robin scheduling.	8
4 c	Explain any one Real Time scheduling algorithm.	3

	<b>Module -3</b>	
5 a	Explain the critical section problem.	5
5 b	Explain the semaphore implementation.	6
5 c	Explain the dining philosophers problem	5
	OR	
6 a	What is deadlock? When does a deadlock condition arise?	6
6 b	What is system resource allocation graph? Mention the methods for handling deadlock.	6
6 c	Describe the safety algorithm.	4
	<b>Module -4</b>	
7 a	Why swapping is required? Explain standard swapping and swapping on mobile systems.	10
7 b	Explain the basic method of implementing paging concept.	6
	OR	
8 a	What are the benefits of virtual memory?	4
8 b	Explain the procedure for handling page fault.	6
8 c	Explain the optimal page replacement policy.	6
	<b>Module -5</b>	
9 a	Explain swap space management with an example.	5
9 b	Explain about the disk structure of a file system.	5
9 c	Mention the different file attributes constituting for the file management.	6
	OR	
10 a	Explain the methods to access a file in the operating system.	6
10 b	How can the directory are implemented in the file system.	5
10 c	Explain the different file operations implemented in the file system.	5