



**DECEMBER 2021: END SEMESTER ASSESSMENT B Tech 5<sup>th</sup> SEMESTER**

**UE18EC315 – Real Time Operating Systems**

Time: 3 Hrs	Answer All Questions	Max Marks: 100
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1	a)	Describe different goals of an operating system.	10
	b)	What is the need of different types of OS ?	5
	c)	What are the Advantages of Microkernel ?	5
2	a)	Describe role of any 5 fields of process control block.	10
	b)	Why scheduling of process is required ? What are Long-, Medium-, and Short-Term Schedulers ?	2+3 =5
	c)	What is mailbox and how does it works ?	5
3	a)	Discuss different criteria used for comparing CPU-scheduling algorithms	10
	b)	Describe how round robin scheduling works.	5
	c)	What is aging technique to avoid starvation of a low priority process ?	5
4	a)	Explain the terms with respect to memory management i) Relocation ii) Protection iii) Sharing iv) Virtual memory v) Physical Address	2x5 =10
	b)	What is meant by fragmentation? Differentiate between internal and external fragmentation	1+4 =5
	c)	Fill in the blanks a. For fixed partition size of each region is _____. b. _____ fragmentation occurs for dynamic partition. c. _____ placement algorithm chooses the block that is closest in size to the request. d. Page frame resides on _____. e. Address translation generate _____ address from virtual address.	5
5	a)	Explain how dispatcher works in association with ISR.	10
	b)	Write true or false i) fork() function is used to create child process. ii) wait() function is used to create delay iii) open() function can be used to create a fifo only for reading purpose. iv) semop() function can be used for both locking and unlocking of semaphore v) For message queue message can be sent through msgsnd() function without knowing message id.	5
	c)	Write a C code for Linux system to demonstrate functionality of thread.	5