Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER III (NEW) – EXAMINATION – WINTER-2016

Subject Code: 3735204 **Date:25/10/2016**

Subject Name: Advanced Device Drivers-II

Time:02:30 pm to 05:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Write the skeleton code for simple hello module and list down the steps for loading and unloading.	**07**
	(b)	Differentiate between char devices and block devices.	**07**
Q.2	**(a)**	Explain the steps in writing a simple character driver with suitable APIs.	**07**
	(b)	Explain the steps in building Linux kernel image for target architecture.	**07**
		OR	
	(b)	Explain the significance of BSP in porting RTOS image for target architecture.	**07**
Q.3	**(a)**	Explain the steps in implementing a serial driver in Linux kernel.	**07**
	(b)	Write a short note on kobjects and their role in sysfs interface.	**07**
		OR	
Q.3	**(a)**	Write a short note on bottom halve processing in interrupt handling.	**07**
	(b)	Explain memory management in Linux kernel space with the focus on slab memory.	**07**
Q.4	**(a)**	What are race conditions? Explain Linux kernel support to avoid the race conditions.	**07**
	(b)	Explain the significance of procfs in interfacing drivers with userspace.	**07**
		OR	
Q.4	**(a)**	Write a short note on timer management in Linux kernel space.	**07**
	(b)	Differentiate between periodic mode and one shot mode timers supported by a typical RTOS.	**07**
Q.5	**(a)**	Explain the Linux kernel support for handling watchdog timers.	**07**
	(b)	Write a short note on kernel debugging techniques in Linux.	**07**
		OR	
Q.5	**(a)**	Explain the architecture of a typical RTOS ported on Cortex-M3 based architecture.	**07**
	(b)	List and explain few exception handlers supported in a typical RTOS for Cortex-M3 architecture.	**07**

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