

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 3725208**Date: 04/06/2016****Subject Name: Device Drivers – I****Time: 10:30 am to 01:00 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) What are the difference between kernel mode vs. user mode **07**
(b) Explain the importance features of the linux operating system. **07**
- Q.2** (a) Explain the steps for registering and deregistering a char driver in kernel space with a skeleton code. **07**
(b) Explain the steps in adding system call to kernel space. **07**
- OR**
- (b) Write a short note on device special files with the listing of macros related with major, minor numbers. **07**
- Q.3** (a) What is a semaphore?
Explain semaphore operations in detail with an example from a typical RTOS. **07**
(b) Explain various allocation algorithms. **07**
- OR**
- Q.3** (a) What is Priority inversion problem?
Explain any one solution to avoid this problem. **07**
(b) Write a short note on configuring FreeRTOS kernel with few examples of configuration options. **07**
- Q.4** (a) What are the primary differences between Networking operating system and Distributed operating system. **07**
(b) What are typical characteristics of a Real Time Operating Systems? **07**
- OR**
- Q.4** (a) List out and explain various scheduling algorithms supported by Linux kernel. **07**
(b) Differentiate between periodic and a periodic tasks with an example. **07**
- Q.5** (a) What is a system call?
List out few system calls used for process management in linux environment. **07**
(b) Explain the procedure of building custom kernel image from sources. **07**
- OR**
- Q.5** (a) Explain printk API along with various log levels and their significance. **07**
(b) Write a short note on scheduling jitter and interrupt latency. **07**
