Reg. No.									

MANIPAL UNIVERSITY
SCHOOL OF INFORMATION SCIENCES

SECOND SEMESTER MASTER OF ENGINEERING – **ME** (EMBEDDED SYSTEMS) /
FOURTH SEMESTER MSc Tech (EMBEDDED SYSTEMS)
DEGREE EXAMINATION – APRIL / MAY 2016

SUBJECT: ESD 604 – DEVICE DRIVERS

Monday, May 2, 2016

Time: 10.00 – 13.00 Hrs. Max. Marks: 100

1. Distinguish between user space and kernel space as applied to Unix.
(10 marks)

2. How do we handle errors in init_module in a linux kernel module?
(10 marks)

3. Distinguish between major and minor numbers with respect to device drivers.
(10 marks)

4. Where is struct file used in linux device drivers? What are its fields?
(7+3 = 10 marks)

5. Why do we use copy_to_user and copy_from_user functions in Linux kernel space? Give examples
(6+4 = 10 marks)

6. How can we create a proc entry? Illustrate with an example.
(5+5 = 10 marks)

7. What are timers? How do we delete a timer in the Linux kernel?
(6+4=10 marks)

8. Why do we use memory barriers? What are the different kinds of barrier functions available for use in kernel modules?
(6+4 = 10 marks)

9. How should we write an interrupt handler? Describe the usage of bottom half in interrupt handlers.
(5+5 = 10 marks)

10. How do we prevent race conditions in interrupt handlers?
(10 marks)

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