Code: 9A12803

R09

B.Tech IV Year II Semester (R09) Advanced Supplementary Examinations, July 2013

DEVICE DRIVER DEVELOPMENT

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) Explain do's and don'ts when writing a device driver.
(b) Explain classes of devices and modules.
(c) Distinguish between user space and kernel space.

2 (a) List two steps involved in char device registration.
(b) Explain the layout of sculls memory usage.

3 (a) List the debugging challenges in kernel programming.
(b) Describe debugging by quering and printing.

4 (a) What is K malloc and how does it differ from normal malloc? Why can't we use malloc in kernel code?
(b) Which function allocates a contiguous memory region in the virtual address space?

5 (a) What happens when the system tries to do more than one task? Explain briefly about the concurrency.
(b) Define spin lock. Explain the situation in which the use of spin lock mechanism would be highly useful to lock the transfer of control to a higher priority task.

6 (a) Describe how timing issues are addressed.
(b) Explain the tasklet mechanism.

7 (a) What are the major steps involved in preparing the parallel port?
(b) Write a short notes on top and bottom halves.

8 (a) Justify how to reduce the amount of duplicated code using linked list.
(b) How can the device driver implement asynchronous signaling?

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