Question Paper

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal School of Information Sciences (MSIS), Manipal
Second Semester Master of Engineering - ME
(Embedded Systems) Degree Examination - April / May 2024

Device Drivers [ESD 5201]

Marks: 100   **Duration: 180 mins.**

Wednesday, April 24, 2024

Answer all the questions.

1)	Classify the different types of devices. Give examples for each type. (L2, CO1, PO3)	(10)
2)	Explain name-space pollution? How do we avoid it? (L2, CO3, PO3)	(10)
3)	Discuss how do we handle errors in init_module in a linux kernel module? (L2, CO1, PO3)	(10)
4)	Discuss how do we dynamically allocate major number? Give an example. (L2, CO4, PO3)	(10)
5)	Describe why do we use copy_to_user and copy_from_user functions in linux kernel space? Give examples (L2, CO3, PO3)	(10)
6)	Explain blocking I/O? How do we implement blocking I/O in a read module? (L2, CO4, PO3)	(10)
7)	Discuss spin-locks? Where do we use spin locks? Distinguish between spin-locks and semaphores. (L2, CO3, PO3)	(10)
8)	Explain how can you build your own task queue inside the linux kernel? How can you insert tasks into this queue? How can you schedule this queue? (L2, CO3, PO3)	(10)
9)	Discuss how should we write an interrupt handler? Describe the usage of bottom half in interrupt handlers. (L2, CO4, PO3)	(10)
10)	Explain the basic functions of the open method? Illustrate with an example code (L2, CO3, PO3)	(10)

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