

Code: 06MC405C

MCA IV Semester Supplementary Examinations September/October 2014

SYSTEMS PROGRAMMING

(For students admitted in 2008 only)

Time: 3 hours

Max Marks: 60

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Differentiate between :
 - (i) Kernel modules and application programs.
 - (ii) Policy and mechanism.(b) What is the reason for splitting the kernel's role into various tasks?
- 2 (a) Define a SCULL. What are the various types of devices that are implemented by the SCULL source?
(b) Give the procedure for registering and unregistering a char device into the module.
- 3 Describe various debugging techniques in the Linux kernel.
- 4 Explain the following system calls related memory management.
 - (a) brk ()
 - (b) kmalloc ()
 - (c) vmalloc ()
 - (d) malloc ()
- 5 Explain briefly about Spinlocks & Completions and various system calls associated with them.
- 6 (a) Explain the functions related to declare register and remove kernel timers.
(b) What is a tasklet? Explain the purpose of a tasklet.
- 7 (a) Explain how spinlocks and circular buffers are used to protect data from concurrent access.
(b) Explain various string functions available in Linux kernel for using I/O ports.
- 8 Describe the procedure for implementation llseek () system call with a sample code.
