## I SEMESTER M.TECH.(DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING) MAKEUP EXAMINATIONS, JAN 2024 SUBJECT: ADVANCED SYSTEM SOFTWARE (CSE - 5114) REVISED CREDIT SYSTEM

(/01/2024)

Time: am to pm

• Answer **ALL** the questions.

MAX.MARKS: 50

## **INSTRUCTIONS TO CANDIDATES:-**

<ul> <li>Mi</li> </ul>	ssing data may be suitable assumed.			
		Ma rks	СО	B
1A.	Illustrate with an example, how paging works in hardware.	5M	C01	2
1B.	Show a neat diagram of a process descriptor.	3M	CO1	2
1C.	Design the transition between User and Kernel mode in terms of context switch.	2M	CO1	3
2A.	Describe the different types of synchronization technique.	4M	CO2	2
2B.	Discuss the techniques used in invoking the scheduler() function.	3M	C01	2
2C.	Illustrate the relationships among the application program that invokes a system call.	3M	CO2	3
3A.	Discuss how linear addresses are assigned to noncontiguous memory areas.	4M	CO2	4
3B.	Describe the role of virtual file systems. Discuss the three main classes of filesystems supported by virtual file systems.	4M	CO2	2
3C.	Describe the most significant fields of the cache descriptor table.	2M	CO2	2
4A.	Disuss the role of a device driver. How to load modules in the kernel subsystem.	5M	CO3	2
4B.	Discuss the different loglevels used in printk() statement.	3M	CO3	2

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL (A constituent unit of MAHE, Manipal)

- 4C. Discuss the short module to access I/O memory 2M CO3 2 and ports.
- 5A. Show the implementation of semaphore 5M CO3 3 mechanism to avoid race condition while accessing the scull\_dev data structures.
- 5B. Describe the inference mechanism in logic 3M CO4 2 programming model.
- 5C. Discuss any two applications of parallel and 2M CO5 2 distributed computing.