Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 40378

M.E./M.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

First Semester

Computer Science and Engineering

CP 5153 — OPERATING SYSTEM INTERNALS

(Common to M.E. Computer Science and Engineering and (With Specialization in Networks)/M.E. Multimedia Technology/M.Tech. Information Technology)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Name any two features of multiuser operating system.

2. Identify the usage of Device Drivers.

3. Define process.

4. Differentiate between regular processes and kernel threads.

5. State the need of Virtual File System.

6. Give the data structures associated with dentry cache.

7. What are the three memory zones offered by Linux?

8. What is Permanent Kernel mapping?

9. List down the basic mechanisms offered by Unix systems to allow interprocess communication.

10. What do you mean by executable file?

PART B — (5 × 13 = 65 marks)

11. (a) (i) List and explain the file handling system calls. (6)

    (ii) With suitable sketch, explain the kernel model. (7)

Or

    (b) Explain the issues of memory management with illustration. (13)

12. (a) Write short notes on the following :

    (i) Process states (6)

    (ii) Relationship among processes. (7)

Or

    (b) Elaborate in detail about the functionalities of destroying processes. (13)

13. (a) (i) With suitable illustration, explain VFS file model. (8)

    (ii) List and explain the methods of dentry object. (5)

Or

    (b) Analyze and explain the implementation of VFS system calls. (13)

14. (a) Identify and explain the role of page descriptor in page frame management. (13)

Or

    (b) Demonstrate and explain Buddy System algorithm with relevant example. (13)

15. (a) Explain how reading from and writing into pipe is carried out. (13)

Or

    (b) Discuss in detail about Program Segments and Process Memory Regions. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Demonstrate and explain the system calls used to create a process. (15)

Or

    (b) Examine in detail about exec functions supported by Unix. (15)

—————

40378