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14SCS11

First Semester M.Tech. Degree Examination, Dec.2014/Jan.2015
Advances in Operating Systems

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1
 - a. With a neat diagram of five – state process model, briefly explain each state and the associated possible transition. (10 Marks)
 - b. Discuss the five principal storage management responsibilities necessary for the efficient and orderly control of storage allocation. (10 Marks)
- 2
 - a. List the kernel mode components of windows. Also explain any five components of the executive module of windows operating system. (10 Marks)
 - b. Explain the key design issues of multiprocessor operating system. (10 Marks)
- 3
 - a. Draw the windows thread states and explain each state and their transition. (10 Marks)
 - b. Explain the virtual memory addressing and page replacement algorithm in Linux memory management. (10 Marks)
- 4
 - a. Discuss the four classes of real – time scheduling algorithms. (08 Marks)
 - b. Discuss in detail, the design issues of multiprocessor scheduling. (08 Marks)
 - c. Explain the distributed dead lock. (04 Marks)
- 5
 - a. With respect to computer security threats, describe any two kinds of threat consequences and the kinds of attacks that result in each consequence. (10 Marks)
 - b. Explain the classification and categories of viruses by target and by concealment strategy. (10 Marks)
- 6
 - a. Explain any four characteristics of embedded operating systems. (08 Marks)
 - b. Explain the two scheduler designs of e Cos. (08 Marks)
 - c. Explain the organization of virtual address space of each process created by Linux operating system. (04 Marks)
- 7
 - a. Explain the four different mechanism by which a user process can perform IPC using Linux kernel. (10 Marks)
 - b. With a neat block diagram, explain the windows NT, executive process and thread manager. (10 Marks)
- 8
 - a. With a neat diagram, describe the steps followed by a cache manager of windows NT executive in cached read operation. (10 Marks)
 - b. Compare the multithreading versus symmetric multiprocessing. Also discuss the potential advantages of SMP over uniprocessor. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.