18SCS12

USN ☐☐☐☐☐☐☐☐☐☐

First Semester M.Tech. Degree Examination, Dec.2018/Jan.2019
Advances in Operating Systems

Time: 3 hrs.   Max. Marks: 100

Note: *Answer FIVE full questions, choosing*
ONE full question from each module.

Module-1

1   a.   List the operating system typical services and explain evolution of operating system.
                                                                                (10 Marks)
    b.   With a neat diagram explain the architecture of window vista.   **(10 Marks)**

OR

2   a.   What is process? Explain two state process and five-state process model.   **(08 Marks)**
    b.   Explain security issues in design of operating system.   **(07 Marks)**
    c.   Explain the UNIX SVR4 process management.   **(05 Marks)**

Module-2

3   a.   Explain the key benefits of threads derive from the performance implications.   **(05 Marks)**
    b.   Explain the categorization of thread implementation with advantages and disadvantages.
                                                                                (08 Marks)
    c.   Explain the benefits of a microkernel organization.   **(07 Marks)**

OR

4   a.   Write typical memory management formats.   **(05 Marks)**
    b.   Explain the operating system policies for virtual memory.   **(10 Marks)**
    c.   Explain Linux/UNIX memory management.   **(05 Marks)**

Module-3

5   a.   Explain design issues of scheduling on a multi processor.   **(05 Marks)**
    b.   Explain the proposals for multi processor thread scheduling and processor assignment.
                                                                                (08 Marks)
    c.   Explain the unique requirements of the real – time operating systems. **(07 Marks)**

OR

6   a.   Explain the popular classes of real-time scheduling algorithms.   **(08 Marks)**
    b.   Explain the Linux scheduling.   **(05 Marks)**
    c.   Write the comparison of windows/Linux scheduling.   **(07 Marks)**

Module-4

7   a.   Discuss some of the key characteristics of an embedded operating system.   **(10 Marks)**
    b.   What is eCOS? Explain the various eCOS components with help of layered structure architecture.   **(10 Marks)**

OR

8 a. With a neat diagram explain the components of Tiny OS. (10 Marks)
   b. List and explain the key categories of malicious software. (10 Marks)

Module-5

9 a. Explain the different mechanisms by which a user process can perform IPC using the kernel. (10 Marks)
   b. With a neat diagram explain the process and resource management organization in Linux. (10 Marks)

OR

10 a. Explain with figure how traps, interrupts and exceptions are handled by the windows NT/2000 organization. (10 Marks)
    b. Explain the windows NT trap modules with a block diagram. (10 Marks)

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