M.Tech Odd Semester (CBCS) Exam., December—2016

(Computer Science and Engineering)

ADVANCED OPERATING SYSTEM

(1st Semester)

Course No. : MCSECC 02

Full Marks : 50
Pass Marks : 15

Time : 2 hours

Note : 1. Attempt *any* **five** questions.
2. Begin each answer in a new page.
3. Answer parts of a question at a place.
4. Assume reasonable data wherever required.
5. The figures in the margin indicate full marks for the questions.

1. *(a)* What is the motivation for developing distributed systems? 5

(b) Briefly explain the issues in a distributed operating system. 5

2. *(a)* Explain briefly the Lamport's logical clock. Also explain the limitations of Lamport's logical clock. 5

(b) Write the generalized non-token based algorithm for distributed mutual exclusion, explaining each step clearly. 5

3. *(a)* Explain the Ho-Ramamoorthy's algorithm for centralized deadlock detection in distributed operating system. 5

(b) Explain the issues in distributed deadlock detection. 5

4. Write the termination detection algorithm using SHORT, FLOOD and ECHO messages. 10

5. *(a)* Explain the Byzantine's agreement problem. Also comment on the solution to the Byzantine's problem. 5

(b) Explain the application of agreement protocols. 5

6. *(a)* Explain the interactive consistency algorithm. 5

(b) Explain the motivation for implementing distributed shared memory. 5

7. Write short notes on the following : 5×2=10

(a) Central-server algorithm

(b) The migration algorithm

8. Explain the design issues in implementing distributed file systems. 10

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