Roll No. ....

41812

May, 2019

M.Tech. (Computer Science & Engineering)

1st Semester (Reappear)

ADVANCED OPERATING SYSTEMS (MCSE-17-103)

Time : 3 Hours　　　　　　　Max. Marks : 75

Instructions :

1.　*It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*

2.　*Answer any four questions from Part-B in detail.*

3.　*Different sub-parts of a question are to be attempted adjacent to each other.*

PART–A

1.　(a)　What is a critical section problem?　　　(1.5)

　　(b)　What is a deadlock?　　　(1.5)

　　(c)　What is RPC?　　　(1.5)

　　(d)　What is a Lamport Logical clock?　　　(1.5)

　　(e)　What is a log structured file system?　　　(1.5)

(f) What is memory coherence? (1.5)

(g) What are issues in distributed scheduling? (1.5)

(h) What is the difference between deadlock and starvation? (1.5)

(i) What is Real time operating system? (1.5)

(j) What is the problem of concurrency control? (1.5)

PART–B

2. (a) Explain the semaphore in detail. (10)

   (b) Explain the role of monitors in synchronization? (5)

3. (a) What is Vector clock? Explain its limitation. (7)

   (b) Explain Distributed deadlock detection algorithm in detail. (8)

4. (a) Explain path -pushing deadlock detection algorithm in detail. (8)

   (b) What is distributed shared memory. (7)

5. (a) What are design issues in designing of a distributed file system? (5)

   (b) Explain load-distributing algorithms for distributed scheduling. (10)

6. (a) What is backward and forward error recovery? Explain the write-ahead-log protocol. (5)

   (b) Explain synchronous check pointing and recovery technique. (10)

7. (a) Explain process synchronization in Mach operating systems. (10)

   (b) Explain fault tolerance issue in multiprocessor operating system. (5)

_____