

Total No. of printed pages = 3

19/2nd Sem/PCSE 202

2022

ADVANCED OPERATING SYSTEM

Full Marks – 100

Time – Three hours

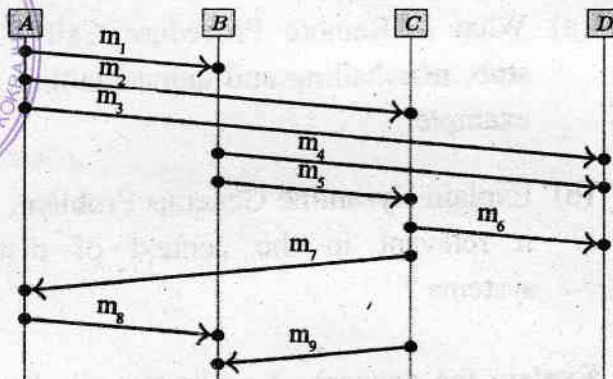
The figures in the margin indicate full marks
for the questions.

Answer any *five* questions.

1. (a) What is Remote Procedure Call? Explain stub, marshalling and unmarshalling with an example. 10
- (b) Explain Byzantine Generals Problem. How is it relevant in the context of distributed systems? 10
2. Explain the concept of replication in distributed system. What are the major challenges in replication? Discuss the ways to overcome the challenges. 20

[Turn over

3. (a) What is read quorum and write quorum ?
Explain their role in fault tolerance. 10
- (b) How does Network Time Protocol estimate time over a network ? 10
4. (a) Explain the ordering of events using happens before relation. 10
- (b) Given the sequence of messages in the following execution, show the Lamport Timestamps and Vector Timestamps at each send or receive event. 10



5. (a) Explain consensus in distributed system. 10

(b) What is Thrashing? Why does it occur?
How to solve Thrashing? 10

6. Write short notes on: 10×2=20

(a) Synchronisation Techniques

(b) Bounded buffer problem.

