

Sr. No...003701/004701

December 2023

B.Tech CE/CSE- VII SEMESTER

Advanced Operating Systems (PEC-CS-S-701-I)

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

- Q1 (a) What are embedded systems? (1.5)
(b) Spooling was developed in which generation? (1.5)
(c) Define Lamport's logical clock. (1.5)
(d) Name any one deadlock detection algorithm in distributed OS. (1.5)
(e) Which grain size of computations for better performance of the system? (1.5)
(f) Define NUMA. (1.5)
(g) In which type scheduling no factor/criteria is taken into consideration? (1.5)
(h) What are aperiodic tasks? (1.5)
(i) Which part is used for input the data/signals into real time system? (1.5)
(j) Which of the following virtual machine is used by the Android operating system? (1.5)

PART -B

- Q2 What are the functions of operating system from user's view and system view? Explain in detail. What are different types of operating system? (15)
- Q3 What are distributed systems? What are the communication protocols in distributed system? Explain one of them in detail. (15)
- Q4 (a) What are different structures of multiprocessor operating system? Explain. (10)
(b) What are process migration strategies supported by multiprocessor system? (5)
- Q5 (a) What are real time systems? What are the features of real time operating system? (10)
(b) Discuss Priority Inversion Problem. (5)
- Q6 What are the characteristics of mobile systems? Explain the design issues faced while designing the mobile operating system? (15)
- Q7 Write short note on the following:- (15)
a) Process synchronization in multiprocessor system
b) Clock synchronization in Distributed OS
c) Android OS