December 2023

B.Tech.(IT)-VII SEMESTER, Re-Appear

Advanced Operating System (OEC-IT-702-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)   Explain Multi-threading in brief.   (1.5)

(b)   Discuss the need of Virtual Memory.   (1.5)

(c)   Define Remote Procedure Calls (RPC) in brief.   (1.5)

(d)   Explain Batch operating systems and its advantages.   (1.5)

(d)   What is Convoy Effect?   (1.5)

(e)   Discuss the need of Virtual Memory.   (1.5)

(f)   What is software trap? and how it is used in software design?   (1.5)

(g)   Explain Critical Section.   (1.5)

(h)   Explain Hard and Soft real time scheduling in brief.   (1.5)

(i)   Differentiate Single and Multi-user systems.   (1.5)

PART -B

Q2 (a)   Explain different types of Operating Systems in brief.   (10)

(b)   What are the design issues of Mobile Operating Systems?   (5)

Q3 (a)   Explain the need of Clock Synchronization in brief.   (5)

(b)   Explain any two processor scheduling algorithms with appropriate examples.   (10)

Q4   What is deadlock? Explain different deadlock detection and prevention mechanisms in   (15)
detail. Also give a brief review about deadlock prevention mechanism in different type of
Operating Systems.

Q5 (a)   What is Race Condition? Write a program that shows data Access synchronization   (5)
problem.

(b)   Explain the structure and characteristics of the Real time Operating system.   (10)

Q6 (a)   Explain the characteristics and design structure of Distributed Operating Systems.   (10)

(b)   What are System Calls? Explain different types of System Calls.   (5)

Q7   Write short note on the following: -   (5*3
      (a) Priority Inheritance Protocol Vs Priority Ceiling Protocol   =15)
      (b) Resource Management in Mobile OS
      (c) Android OS