



NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-620015
B.TECH. DEGREE (FOURTH SEMESTER)
BRANCH: COMPUTER SCIENCE AND ENGINEERING
ASSESSMENT 1
SUB.CODE & TITLE: CSPC43 OPERATING SYSTEMS

TIME: 3.30 P.M. TO 4.30 P.M.

DATE: 29.02.2024

MAX. MARKS: 20

ANSWER ALL QUESTIONS

1. In a dual mode operation, how the OS differentiate kernel mode and user mode? What are privileged instructions? Explain how privileged instructions are executed using an example. (4)
2. Using a flow chart, explain the interrupt handling mechanism. Why is the interrupt vector table stored in kernel rather than user memory? (4)
3. Compare System call and function/procedure call in terms of stack usage. (2)
4. What are the features to be added to OS for achieving portability? (2)
5. Draw the thread life cycle diagram and briefly explain. (3)
6. A process creates a child process using the Fork system call. What are the various ways of implementing parent and child processes? (2)
7. Assume three processes A, B and C are running concurrently on a computer system. Process A arrives first at time 0, and its CPU burst time is 100 msecs, Process B arrives at time 0 and it loops ten times; for each iteration of the loop, B uses the CPU for 2 msecs and then it does I/O for 8 msecs. Process C loops for 5 iterations and it uses CPU for 3 msecs and I/O for 5 msecs.
Find the schedule of the processes using the following scheduling policies: Round Robin (RR) with TQ = 10 msecs compute the Average Turnaround Time and Average Waiting Time. (3)
