NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-620015
B.TECH DEGREE (FOURTH SEMESTER)
BRANCH: COMPUTER SCIENCE AND ENGINEERING
ASSESSMENT 3
SUB.CODE & TITLE: CSPC43 OPERATING SYSTEMS

TIME: 10.30 A.M. TO 11.30 A.M. DATE: 02.04.2024 MAX. MARKS: 20

ANSWER ALL QUESTIONS

1. What is race condition? Using an example, demonstrate race condition. (3)

2. What are the requirements that a mutual exclusion solution should satisfy? Explain how Peterson's solution satisfies these requirements. (3)

3. Differentiate: Direct vs Indirect communication. (2)

4. Consider four processes and four single instance resources. The status of the processes are as follows:

	R1	R2	R3	R4
P1	Requests	Granted		
P2	Granted		Granted	Requests
P3		Requests		Requests
P4			Requests	Granted

Draw the Resource Allocation Graph and find whether a deadlock has occurred or not using deadlock detection method. (4)

5. The memory is divided into memory partitions of size 200 KB, 400 KB, 600 KB, 500 KB, 300 KB and 250 KB. Four processes P1, P2, P3 and P4 of sizes 375 KB, 110 KB, 458 KB and 591 place their requests (order P1 to P4) for memory partitions. Find the allocation of partitions using: i) Best Fit ii) Worst Fit. (4)

6. Explain how pages are allocated and address translation process are done in paging systems. (4)

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