JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2024

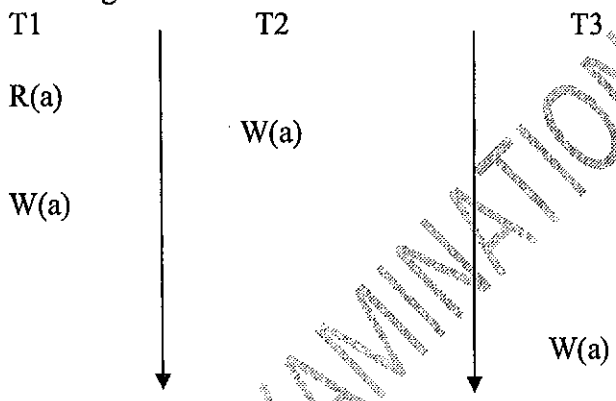
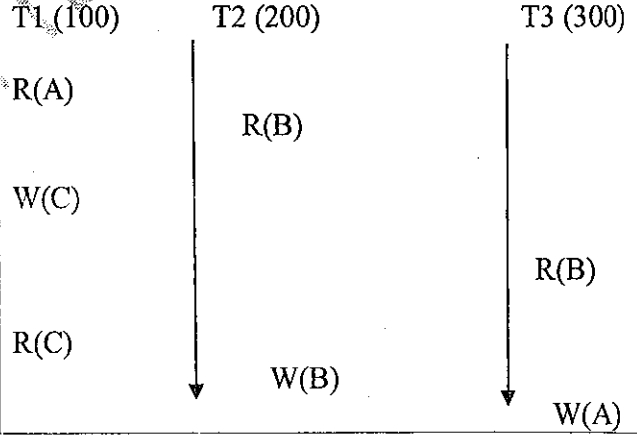
B.Tech-III Semester (CSE/IT)

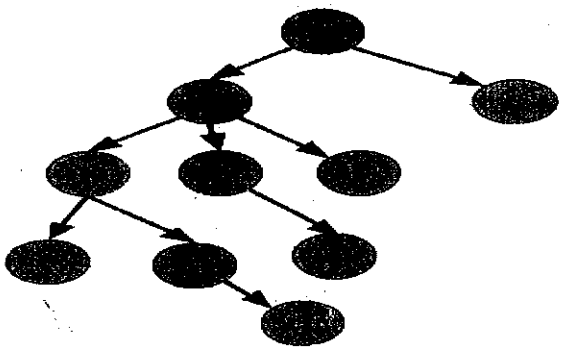
COURSE CODE (CREDITS):18B11CI313 (3) MAX. MARKS: 35

COURSE NAME: Database Management Systems

COURSE INSTRUCTORS: Pardeep, Ekta, Nishant & Pankaj MAX. TIME: 2 Hours

Note: *(a) All questions are compulsory.*
(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	(a) Consider the three transactions T1, T2 and T3 in the given below schedule:  Find the serial schedule corresponding to the above parallel schedule. (b) Name the necessary conditions for a deadlock to occur in a schedule? Explain with suitable transaction schedule examples.	CO-5	[6+3]
Q2	Consider the three transactions T1, T2 and T3 with time stamps in the given below schedule:  	CO-5	7

	Show the sequence of execution of these transactions as per time stamp-based protocol.		
Q3.	Consider the database graph given as under:  Show that the given below schedule of transactions is working as per the graph-based protocol or not: T1 T2 T3 T4 Lock X(B) Lock X(D) Lock X(H) Unlock (D) Lock X(E) Lock X(D) Unlock (B) Unlock (E) Lock X(B) Lock X(E) Unlock (H) Lock X(G) Unlock (D) Lock X(D) Lock X(H) Unlock (D) Unlock (H) Unlock (E) Unlock (B) Unlock (G)	CO-6	9
Q4.	(a) Consider a hard disk in which block size is of 1000B, each record is of 250 B and total number of records are 10000. The index table entry is of 20 B(Key Size: 10 B, Pointer Size: 10 B). What is the average time complexity to search a record from hard disk if index table is maintained as sparse and dense way? (b) Consider a B+ tree with key size 10 B, block size 512 B, data pointer size 5 B. What is the order of leaf and non leaf node in the B+ tree?	CO-6	5+5