QP Code: RM23MTECH147 | Reg. No | | | | | | | | | | | AY 23

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (Second Semester) Examinations, May – 2024

MPECS2044 –Distributed Systems

(CSE)

Time: 3Hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q.1. Answer all questions	CO#	Blooms Level
a. Why distributed databases are essential?	CO1	K1
b. What is meant by hybrid fragmentation?	CO2	K1
c. Recall semantic integrity control.	CO2	K2
d. List the classifications of concurrency control.	CO1	K2
e. Draw a diagram of logging interface.	CO3	K2
f. List types of failures in distributed database system.	CO1	K1
g. State Pointer Swizzling.	CO1	K1
h. Explain Commit Protocols in distributed database system.	CO2	K2
i. What is the advantage of Intraquery parallelism?	CO1	K1
j. Describe the advantages and disadvantages of mobile database.	CO2	K2

PART – B **(10 x 5=50 Marks**

Answer *ANY FIVE* questions	Marks	CO#	Blooms Level
2. a. Explain Distributed data processing. Describe the architecture of distributed database management system along with detailed description of its major components.	5	CO2	K2
b. Summarize the concept of semantic data control and discuss about semantic integrity control and its importance.	5	CO2	K2
3.a. Network transmission time accounts for 20% of a null RPC and 80% of an RPC that transmits 1024 user bytes (less than the size of a network packet). By what percentage will the times for these two operations improve if the network is upgraded from 10 megabits/second to 100 megabits/second?	5	CO4	K2
b. Is the memory underlying the following execution of two processes sequentially consistent (assuming that, initially, all variables are set to zero)? P_1 : R(x) l ; R(x) 2; W(y)l P_2 : W(x)l ; R(y) l; W(x)2 Using the R(), W() notation, give an example of an execution on a memory that is coherent but not sequentially consistent. Can a memory be sequentially consistent but not coherent? What are the main attractive features of ATM technology?	5	CO4	K2
4. a. What are the strategic objectives for the definition and allocation of fragments?	5	CO2	K2
b. Explain timestamp based concurrency control algorithm in distributed system?	5	CO2	K2
5.a. Draw a diagram of logging interface.	5	CO3	K2

b.	Discuss the reliability protocols in distributed systems.	5	CO1	K2
6. a.	Draw a diagram for fully memory hierarchy managed by LRM and BM.	5	CO3	K1
b.	Explain in detail the parallel architecture of parallel database systems. Take an example query and show optimization while processing parallel queries?	5	CO2	K2
7.a.	Illustrate object query process architecture?	5	CO3	K2
b.	State PUSH based technology in distributed database system.	5	CO4	K1
8.	Write short notes on any TWO from the following: i) Data Modelsi ii) Global and local Query Optimization iii) Mean time between failure/repair	10	CO2	K2

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