

Roll No: .....

**Hi-Tech Institute of Engineering & Technology**  
**DEPARTMENT OF CSE/IT/AI ML**  
**(SEM-V)Odd Model Test Paper 2023-24**  
**SET-B**

**Subject Code: KCS501**

**Subject Name: DBMS**

**Faculty Name: Prachi Vashist**

*Time: 3 hours*

*Total Marks: 100*

**Note: 1. Attempt all Sections. If require any missing data; then choose suitably.**

**1. Attempt all parts of the following**

**(2\*10=20)**

Q.No	1	Marks	CO
a.	Describe the evolution of Database System.	2	1
b.	Differentiate between strong entity and weak entity.	2	1
c.	How entity sets converted into relations?	2	2
d.	What is the total and partial participation of an entity set E in the relationship set R?	2	2
e.	Suppose a relation schema R(P,Q,R,S) AND A SET OF fd $P \rightarrow QR$ , $Q \rightarrow R$ $P \rightarrow Q$ , $PQ \rightarrow R$ Find canonical cover Fc.	2	3
f.	What is Wait-&- die and wound-&-wait method?	2	4
g.	What is timestamp?	2	4
h.	Define multi valued dependency.	2	3
i.	“A transaction must follow Durability property”. What do you mean by Durability?	2	4
j.	What is multi version protocol?	2	5

**2. Attempt any four questions: -**

**10\*3=30**

Q.No	2	Marks	CO
a.	Draw overall structure of DBMS.	10	1
b.	How a trigger is different from procedure? What are the use of trigger? Write a trigger which will insert the updated salary. The old salary of employee along with the date of updation into the table Employee.	10	2
c.	Discuss various concurrency control methods in DDBMS.	10	5
d.	What is Transaction? Draw transaction state diagram.	10	4
e.	What is Normal Form? Explain 1NF, 2NF and 3NF in detail	10	3

**3. Attempt any ONE part of the following:**

**10\*1 = 10**

Q.No	3	Marks	CO
a.	Write a short note : Super Key, Candidate key, Primary key using examples.	10	1
b.	Explain various elements of ER diagram. Also explain participation constraint in E-R diagram with suitable example.	10	1

**4. Attempt any ONE part of the following:**

**10\*1 = 10**

Q.No	4	Marks	CO			
a.	(i) Write the SQL statement to create student table	10	2			
	<b>Column Name</b>			<b>Data Type</b>	<b>Size</b>	<b>Remark</b>
	Roll no			Number	5	Primary key, mut start with S
	Name			Varcha2	25	Null values are not allowed
	DOB			Date		
	Email			Varchar2	30	Unique
	DOR	Date	Must not less than DOB			
b.	What are the various unary and binary operations used in relational algebra?	10	2			

**5. Attempt any ONE part of the following:**

**10\*1 = 10**

Q.No	5	Marks	CO
a.	What do you mean by anomalies? Explain insertion, deletion and updation anomaly.	10	3
b.	What is JOIN? Explain all types of join in detail.	10	3
	OR What do you understand by transitive dependency? Explain with an example any two problems that can arise in db if transitive dependency is present.		

**6. Attempt any ONE part of the following:**

**10\*1 = 10**

Q.No	6	Marks	CO
a.	What are deadlock prevention techniques?	10	4
b.	What is log based recovery? Explain deferred update and immediate update methods in detail.	10	4

**7. Attempt any ONE part of the following:**

**10\*1 = 10**

Q.No	7	Marks	CO
a.	Explain 2PLP in detail.	10	5
b.	(i)What is Multiple granularity? Explain in detail with example.	10	5
	(ii) Explain validation based protocol.		