



DHARMSINH DESAI UNIVERSITY, NADIAD  
FACULTY OF TECHNOLOGY  
B.TECH. SEMESTER V [IT]

SUBJECT: (IT502) DATABASE MANAGEMENT SYSTEM

Examination : Block Examination      Seat No. : \_\_\_\_\_  
Date : 30/10/2017      Day : Tuesday  
Time : 3:00 to 4.15      Max. Marks : 36

**INSTRUCTIONS:**

1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

**Q.1 Do as directed. [12]**

- (a) Difference between E-R diagram and schema diagram. [2]
- (b) Explain existence dependent entity set with example [2]
- (c) State the difference between dense and sparse indices. [2]
- (d) Two deadlock prevention techniques that use timestamps are \_\_\_\_\_ and [2]  
\_\_\_\_\_.
- (e) What do you mean by a recovery system? Why do we need it? [2]
- (f) "Each site requires a transaction manager." Justify this statement as true or false. [2]

**Q.2 Answer the following questions. [12]**

- (a) Design a **generalization-specialization hierarchy** for a motor-vehicle sales company. The company sells motorcycles, passenger cars, vans, and buses. Justify your placement of attributes at each level of the hierarchy. Explain why they should not be placed at a higher or lower level. [6]
- (b) Explain the shadow paging recovery system with diagrams. [6]

**Q.3 (a) Explain Graph based protocol with example. [6]**

- (b) Consider following **Schedule-1** with several data items. Determine whether this [6]  
schedule is valid under timestamp ordering protocol or not.

T1	T2	T3
R(x)		
		R(z)
		W(z)
	R(y)	
R(y)		
	W(y)	
		W(x)
	W(z)	
W(x)		

**Schedule-1**