

Total No. of Questions : 8]

SEAT No. :

**PB-3816**

[Total No. of Pages : 2

**[6262]-78**

**T.E. (Electronics/E&TC)**

**DATABASE MANAGEMENT**

**(2019 Pattern) (Semester - I) (304183)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8 from following questions.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

- Q1)** a) Explain any three SQL data types with example. [6]  
b) Explain use of group by having clause and order by clause. [6]  
c) Explain the any three aggregate functions in MYSQL with suitable example. [6]

OR

- Q2)** a) Explain any three string functions used in MYSQL with example.[6]  
b) Differentiate between Primary key and Foreign key. [6]  
c) Explain three types of outer join. [6]

- Q3)** a) Explain two phase locking protocol with example. [6]  
b) What are the ACID properties of the transaction? [6]  
c) Explain the concept of serial schedule and serializable schedule. [5]

OR

- Q4)** a) Explain when deadlock occurs and how to recover if dead lock takes place. [6]  
b) Explain advantages of concurrent execution of transactions. [6]  
c) Explain the concept of recoverable and non recoverable schedules with suitable example. [5]

**P.T.O**

- Q5)** a) Explain client server architecture with suitable database application. [6]  
b) Draw and explain memory structure of instance in Oracle architecture. [6]  
c) Draw and explain 3-tier web architecture. [6]

OR

- Q6)** a) Explain virtualization in multicore processor. [6]  
b) Explain shared disk architecture with its advantages and disadvantages. [6]  
c) Explain the intra query parallelism query evaluation technique. [6]

- Q7)** a) Explain the types of distributed database system. [6]  
b) Draw and explain client-server architecture for DDBMS. [6]  
c) Explain data fragmentation types in distributed database design (any two). [5]

OR

- Q8)** a) Explain the advantages of distributed database management system? [6]  
b) What is distributed transaction? Explain the types of system failure modes (any two). [6]  
c) Explain two phase commit protocol in distributed database. [5]

