Registration no: | | | | | | | | | | |

Total Number of Pages: 02 **M.TECH**
CSPE201

2nd Semester Back Examination 2016-17

DISRIBUTED DATABASE SYSTEM

Branch: COMPUTER ENGG, COMPUTER SCIENCE, COMPUTER SCIENCE AND ENGG, COMPUTER SCIENCE AND TECH., INFORMATION TECH.

Time: 3 Hours
Max Marks: 70

Q.CODE:Z1169

Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) What is the difference between local applications and distributed applications?
b) What are three typical frequency measurements that can be used to classify the regularity of data delivery?
c) Explain local mapping transparency.
d) What do you mean by integrity constraints in distributed database? Explain with a suitable example.
e) What are the objectives of the design of data distribution?
f) Explain distributed join.
g) What is byzantine agreement?
h) What is data replication?
i) How distributed wait-for graph (DWFG) is different from local wait-for graph(LWFG)?
j) What is MULTIBASE?

Q2 **a)** Explain the features of distributed database. How it is different from centralized database? **(5)**

b) Draw and explain various components of distributed DBMS. **(5)**

Q3 What do you mean by distribution transparency? Explain different levels of distribution transparency. What is the level of transparency of the given transaction and why? Consider the schema SUPPLIER(SNO,NAME,CITY) and SUPPLY(SNO,PNO,DNO,QUAN) and the following transaction: **(10)**

```
Read(tty,$PNO)
Select Name into $Name
from SUPPLIER,SUPPLY
where SUPPLIER.SNO=SUPPLY.SNO
and SUPPLY.PNO=$PNO
Write(tty,$NAME)
```

Q4 **a)** What do you mean by data fragmentation? Discuss different types of data fragmentation with suitable example. **(5)**

b) Bottom-Up design approach is suitable when a database system is to be designed from scratch. Justify with an example. **(5)**

Q5 **a)** Explain 2-Phase-Commitment Protocol in distributed database system. **(5)**

b) What do you mean by concurrency control in distributed database system? Explain the timestamp mechanism. **(5)**

Q6 **a)** List the heuristics for query optimization. Explain any one heuristic with a proper example. **(5)**

b) Explain checkpoint and cold restart of a distributed database system. **(5)**

Q7 **a)** Explain function shipping in CICS/ISC. **(5)**

b) List the problems of Heterogeneous distributed databases. **(5)**

Q8 **Write Short Notes (Any Two)** **(5 x 2)**

a) Non-locking commitment protocols.

b) Distributed deadlock.

c) ENCOMPASS

d) Write-locks-all.