Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

Re-Examination

Jan 2019

Max. Marks: 100 **Duration: 3 Hrs**

Class: T.E. **Semester: V**

Course Code: TEITC504 **Branch: Information Technology**

Name of the Course: Advanced Database Management Systems

Instruction:

(1) All questions are compulsory

(2) Draw neat diagrams

(3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1 (a)	What are the advantages and disadvantages of ODBMS?	5	CO4
(b)	What is the difference between triggers and assertions ? With the help of example explain triggers and assertions.	5	CO1 CO2
(c)	What are the roles of the Analysis, Redo, and Undo phases in ARIES ?	5	CO1
(d)	Write the five difference between OLAP and OLTP.	5	CO5
Q.2 (a)	With the help of suitable example design a star schema and snowflake schema and Show the primary keys, foreign keys and measures.	10	CO5
	OR		
	Draw and explain the architecture of data warehousing with data staging area.	10	CO5
(b)	Explain the embedded SQL and SQLJ with the help of example.	10	CO1 CO2
Q.3(a)	What is ETL process? How ETL process is used in data warehousing? Describe each phase in brief.	10	CO5
(b)	Explain two phase locking protocol and serializability with the help of example.	10	CO1
	OR		
	Why to use Write Ahead Logging and check pointing in transaction processing explain with the help of example.	10	CO1 CO2

Q.4 (a)	Assume that tree is initially empty. The number of pointers that are fit in one node are 4. Draw the B+ tree for the following and insert the value in node and show all the steps. 2,3,5,7,11,17,19,23,29,31,9,10,8	10	CO1
(b)	Explain the Mandatory Access Control and Role Based Access Control for Multilevel Security.	10	CO3
	OR		
	Explain Statistical Database with example.	10	CO3
Q.5 (a)	Compare MOLAP, ROLAP, and HOLAP.	10	CO5
(b)	Find out the data transfer cost of distributed query processing for following query. " For each employee retrieve the employee name and name of the department for which employee works". Suppose there are three sites in distributed systems. Site1 contains employee relation Employee(fname,minit,lname,ssn,bdate,address salary,sssn, dno) There are 20000 records , each record is 200 bytes long. Ssn field is 9 bytes,fname field is 15 bytes, dno field is 4 bytes, lname is 15 bytes. Site 2 contains Department relation Deparment(dname,dno,mgrssn,mgrstartdate) There are 200 records, each record is 45 bytes long, dno is 4 bytes, dname 10 bytes, mgrssn 9 bytes. Query is submitted to result site 3. Consider different strategies for executing this query and find which strategy is best using natural join and semi join operation.	10	CO4
	OR		
	Consider the following relation Proj(pnumber,pname,budget,location) For the above relation assume any 10 tuples and fragment the relation horizontally and vertically and test the correctness rules for both the fragmentation.	10	CO4