TE-sem-V - old-comps- ADMS

17/5/1:

Q.P. Code : 580001

(3 Hours) [Total Marks : 100

(1) Question No. 1 is compulsory.
(2) Attempt any four questions from remaining questions.
(3) Assume any suitable data wherever required.

Q1. (a) Construct EER diagram for Library management system. Convert it to relational schema. (10)
(b)Explain nested relation in ORDBMS with proper example. (10)

Q2. (a) Explain data fragmentation, replication and allocation techniques for distributed data design. (10)
(b) Consider following schema: (10)

DEPT(DNO, DNAME,LOCATION, NUM_EMP)
EMP(ENO, E_NAME, DNO, SAL)
WORKS(ENO, PNO, ROLE)
PROJ(PNO, P_NAME, P_TYPE, P_DURATION)

1) Give two examples of horizontal and vertical fragmentation each.
2) Give the derived horizontal fragmentation on EMP and PROJ relation. Write the resultant fragmentation.

Q3. (a) Explain left, right, outer and inner join with example. (10)
(b) Explain heuristic approach of query optimization with relevant examples. (10)

Q4. (a) Explain concurrency control in distributed database. (10)
(b)Explain the type of transparencies in distributed database. (10)

Q.5 (a) What is XML DTD? Explain with example. (10)
(b) Explain nested loop join and block nested loop join algorithms in query processing. (10)

Q6. (a) Explain macro life cycle in database design methodology. (10)
(b) State and explain EER to relational schema mapping rules with illustrative examples. (10)

Q7. Write short notes on (any FOUR) (20)
(i) EXIST and NOT EXIST clause in SQL
(ii) Measure of query cost
(iii) Storage and access methods in SQL3
(iv) XML schema element
(v) Client Server architecture

TE- Sem - V - CBSGS - Computers 23/5/17

Q.P. Code : 581201

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question **No.1** is **compulsory**.
(2) Answer **any four** questions from **Q.No.2** to **Q.No.7**.
(3) **Figures** to the **right** indicate **full marks**.
(4) Assume suitable **data** if **required**.

1. (a) What is memory segmentation? State advantages of memory segmentation. **5**
   (b) What is GDT? Explain structure of GDT. **5**
   (c) Explain integer pipeline of Pentium processor? **5**
   (d) Briefly explain string instructions of 8086. **5**

2. (a) Design 8086 based system for following requirements : **10**
      (i) Clock frequency 5 MHz
      (ii) 512 KB RAM using 32 KB x 8
      (iii) 256 KB ROM using 32 KB x 8
   (b) Draw and explain block diagram of 8253. **10**

3. (a) Explain DMA data transfer modes in brief. **10**
   (b) Explain, with neat diagram, address translation mechanism implemented on 80386DX. **10**

4. (a) Explain, with neat diagram, cache memory organization is supported by Pentium processor. **10**
   (b) Draw and explain block diagram of Pentium processor. **10**

5. (a) Draw and explain block diagram of SuperSparc processor. **10**
   (b) Explain interrupt structure of 8086. **10**

6. Write short note on :
      (a) Mixed language programming **5**
      (b) Virtual 86 mode of 80386DX **5**
      (c) Branch prediction logic **5**
      (d) Control registers of 80386DX **5**
