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Roll No.

2007 PUNJAB TECHNICAL UNIVERSITY M.C.A

MCA (Sem.-3rd)

RELATION DATA BASE MANAGEMENT SYSTEM - 1 (MCA - 304 (N2))

Time : 03 Hours
Maximum Marks : 60

Instruction to Candidates:

- 1) Attempt any one question from each Section - A,B,C & D.
- 2) Section - E is compulsory

Section – A (1 * 10 = 10)

Q1) (a) What is database management system? Why do we need a DBMS?

(b) Who is DBA? What are the responsibilities of a DBA?

Q2) (a) Compare file oriented system and database system.

(b) Describe the different types of database languages and their functions in database system.

Section - B

(1 * 10 = 10)

Q3) Describe the basic features of the relational data model, discuss their advantageous, disadvantageous and importance to the end-user and the designer.

Q4) Draw an E-R diagram for an enterprise or an organization you are familiar with.

Section - C
(1 * 10 = 10)

Q5) What is the file organization? What are the different types of file organization? Explain using a sketch each of them with their advantageous and disadvantageous.

Q6) (a) What is relational algebra? What is its use? List relational operators.

(b) What do you mean by relational calculus? What are its types?

Section - D
(1 * 10 = 10)

Q7) (a) What do you mean by threat in a database environment? List the potential threats that could affect a database system.

(b) What is transaction? What are its properties? Why are transactions important units of operations in a DBMS?

Q8) (a) When a transaction is rolled back under time stamp ordering, it is assigned a new stamp. Why can it not simply keep its old time stamp?

(b) How does shadow paging recovery technique differ from other recovery techniques in DBMS.

Section - E
(10 * 2 = 20)

Q9) a) What is DBMS?

b) What is partial-key?

c) What are referential constraints in relational model?

d) What is different between 2nd normal form and 3rd normal form?

e) Describe aggregate function in relational algebra.

f) What is the difference between join and outer join?

g) What is embedded SQL? Why do we use it?

h) What is difference between undo and redo operation?

i) List the types of privileges available in SQL?.

j) What is difference between serial and non-serial schedules?
