Total No. of Questions :12]	

SEAT No.:		
[Total	No. of Pages	:4

[4958] - 201 T.E. (IT)

DETABASE MANAGEMENT SYSTEMS

(2008 Course) (Semester - I)

Time: 3 Hours [Max. Marks: 100

Instructions to the candidates:

P2961

- 1) Answer to the two sections should be written in separate answer books.
- 2) Answer any three questions from each section.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Figures to the right side indicate full marks.
- 5) Use of Electronic pocket Calculator is allowed.
- 6) Assume Suitable data if necessary.

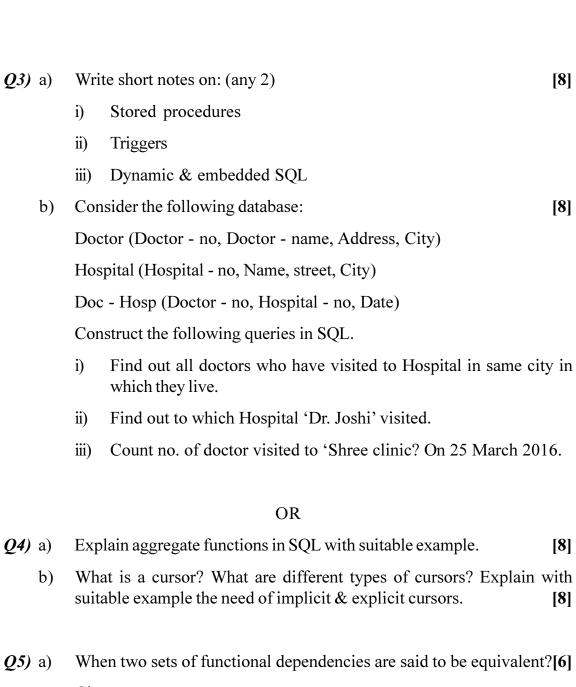
SECTION - I

- **Q1)** a) Explain following Data Models: Hierarchicla, Network, ER and Object Relational model. [8]
 - b) Explain with appropriate example why it is said that file systems lack of data independence. [4]
 - c) What is a relation? What are the properties of a relation? Explain with example. [6]

OR

- Q2) a) Explain good database design properties. With suitable example explain the consequences of bad designing.[6]
 - b) What is the need of mapping cardinality? For a binary relationship set what are the possible mapping cardinalities? Explain with diagrams. [6]
 - c) Define following terms:
 - i) Primary key
 - ii) Foreign key
 - iii) Weak entity set
 - iv) Strong entity set

[6]



Given:

$$F = \{A \to C, AC \to D, E \to AD, E \to H\}$$
$$G = \{A \to CD, E \to AH\}$$

Check if F and G are equivalent?

i) Lossless decomposition.

Write a short note on:

BCNF. ii)

OR

[10]

b)

What is Normalization? Explain difference between 2NF & 3NF with **Q6)** a) suitable example. [8] b) What are Armstrong's axioms? Give the rules for axioms. Prove the pseudo transitivity. **SECTION - II Q7**) a) Describe in brief dynamic hashing/ extensible hashing. [6] Describe structure of B⁺ tree. How does it differ from B. tree. How to b) implement dynamic multilevel indexes? [6] Explain merge - join algorithm. c) [6] OR Define Indexing. Explain sparse, dense & clustered indexing with **Q8)** a) diagram. [6] Explain the factors for evaluating the indexing techniques. b) [6] Explain the techniques for improving speed of access of blocks. c) [6] Explain how deadlock detection and prevention is done? **Q9**) a) [8] Explain recoverable Q cascadeless schedules. [8] b) OR Check whether given schedule is view serializable? *Q10*)a) [4] T_1 Read (Q) Write (Q) Write (Q) Write (Q) b) What is extention in rigorous two phase locking protocal as compared to two phase locking protocol. [6]

c)

[6]

Explain shadow paging with example.

Q11) a)	Define & explain distributed databases with its advantages disadvantages.	[6]
b)	What is data mining? Explain the need of data mining.	[6]
c)	Explain pointer swizzling technique.	[4]
	OR	
Q12) a)	Explain association rules with support & confidence measure.	[8]
b)	Explain column oriented storage with its merits & demerits over Row - oriented storage.	the [8]

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