ROLL NO.	

Code: DC62 **Subject: DATABASE MANAGEMENT SYSTEMS** 

## **Diplete - CS**

**DECEMBER 2013** Time: 3 Hours Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

access data?

- Ouestion 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.

Q.1	Choose the correct or the best alternative in the following:		$(2\times 10)$
	a. Which of the following is a p	roblem of file management system?	
	<ul><li>(A) difficult to update</li><li>(C) data redundancy</li></ul>	<ul><li>(B) lack of data independence</li><li>(D) all of these</li></ul>	

- (A) High level language **(B)** Assembly language (C) Ouery language (**D**) Machine language
- c. Which of the following is an advantage of the database approach?
  - (A) Elimination of data redundancy (B) Ability of associate deletion data (C) Increased security (**D**) All of these
- d. Which of the following contains a complete record of all activity that affected the contents of a database during a certain period of time?
  - (A) report writer **(B)** query language (C) data manipulation language (**D**) transaction log
- e. A table can have only one
  - (A) Foreign key **(B)** Primary key (C) Candidate key (**D**) Composite key
- f. A command that lets you change one or more fields in a record is
  - (A) insert **(B)** modify (C) lookup **(D)** none of these

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	g. Which of the following hardware component is the most important to operation of database management system?				
		<ul><li>(A) high resolution video display</li><li>(C) high speed, large capacity disk</li></ul>	<ul><li>(B) printer</li><li>(D) plotter</li></ul>		
	<ul> <li>h. If a piece of data is stored in two places in the database, then</li> <li>(A) storage space is wasted</li> <li>(B) changing the data in one spot will cause data inconsistency</li> <li>(C) can be more easily accessed</li> <li>(D) both (A) and (B)</li> </ul>				
	i. The relational database environment has all of the following components excep				
		<ul><li>(A) users</li><li>(C) database</li></ul>	<ul><li>(B) separate files</li><li>(D) query languages</li></ul>		
	j. Which of the following is not a method of collision resolution in hashing?				
		<ul><li>(A) chaining</li><li>(C) open addressing</li></ul>	<ul><li>(B) folding</li><li>(D) multiple hashing</li></ul>		
		Answer any FIVE Questions Each question ca	_		
Q.2	a.	What are the different types of database.	pase end users? Discuss the main activ	vities of (8)	
	b.	Describe the three-schema architect data independence and physical data	ture. What is the difference between a independence?	logical ( <b>4+4</b> )	
Q.3	a.	Discuss the database design process	s using high level data model.	(8)	
	b.	<ul><li>(i) Define the entity type and entity</li><li>(ii) Define foreign key. What is this</li></ul>		(4) (4)	
Q.4	a.	What are the unary relational operation	tions? Explain.	(8)	
	b.	Discuss the steps in relational datab	ase design using ER-to-Relational map	pping. (8)	
Q.5	a.	Discuss the following SQL commar (i) Create table (iii) Drop Schema	nds with example:-  (ii) Drop Table  (iv) Alter Table	(8)	

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Consider the following COMPANY database (Keys are underlined) EMPLOYEE (Ename, SSn, Address, Salary, super\_SSn, Dno) DEPARTMENT (Dname, Dno, Mgr\_SSn) DEPT LOCATIONS (Dno, Dlocation) PROJECT (Pname, Pno, Dno) Write SOL queries for the following statements: Retrieve the names and addresses of employees who work in departments located at 'Delhi'. (ii) Retrieve the Manager SSn of Project number 'PO1'. (4+4)a. Discuss the insertion, deletion and modification anomalies. **Q.6 (8)** b. Explain first and second normal forms with suitable examples. **(8)** Discuss multivalued dependencies with suitable examples. **Q.7 (8)** b. Write note on Boyce-Codd normal form. **(8) Q.8** a. Discuss the following:-(i) Files of unordered records (ii) Files of ordered (sorted) records **(8)** b. Discuss the single-level ordered indexes and their types. **(8) Q.9** a. Briefly describe the methods for implementing JOIN operations. **(8)** b. Write short note on Aggregate Operations. **(8)**