

DiplETE – CS

Time: 3 Hours

DECEMBER 2013

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.

- Question 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.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. Which of the following is a problem of file management system?
- (A) difficult to update (B) lack of data independence
(C) data redundancy (D) all of these
- b. What is the language used by most of the DBMSs for helping their users to access data?
- (A) High level language (B) Assembly language
(C) Query 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

- b. 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 SQL queries for the following statements:

- (i) 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)
- Q.6** a. Discuss the insertion, deletion and modification anomalies. (8)
b. Explain first and second normal forms with suitable examples. (8)
- Q.7** a. Discuss multivalued dependencies with suitable examples. (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)