

Seat No. : _____

NC-111

November-2017

B.C.A., Sem.-II

CC-110 : Database Management System – I

Time : 3 Hours]

[Max. Marks : 70

1. (A) Answer the following : 8
(1) Explain functions of DBMS in brief.
(2) Explain database system environment in brief.

OR

Answer the following :

- (1) Explain advantages of DBMS.
(2) Explain types of databases.

- (B) Answer the following : 6
(1) Differentiate data and information.
(2) Explain Hierarchical Model.

OR

Answer the following :

- (1) Explain Relational model.
(2) Explain network model.

2. (A) Answer the following : 8
(1) Explain characteristics of relational table.
(2) Explain functional dependency with example.

OR

Answer the following :

- (1) Explain types of integrity rules.
(2) Explain types of relationships.

- (B) Explain relational set operators. 6

OR

Explain data dictionary and system catalog.

3. (A) Draw an E-R diagram (Chen OR Crow's Foot) for the following : 8

A school operates many departments, each department has many students. Each department employs many professors and also a department offers many courses. Each course generates many classes. A professor may or may not be a dean of school and he also teaches many classes. He also advises many students. The students enrolls in many classes. The building contains many rooms and each room is used for many classes.

OR

Draw an E-R diagram (Chen OR Crow's Foot) for the following :

A departmental store is managed by admin. It has more than one departments. Each department is maintained by many sales persons under the inspection of department head. Admin purchase items from the vendors. Customers visits this departmental store and purchase items. The sales person generates an invoice. The customer submits the payment to the sales person.

- (B) Explain the terms Connectivity, Cardinality and Weak Entities. 6

OR

Explain recursive relationship, relationship degree and Composite Entities.

4. (A) Answer the following : 8

- (1) Explain need for normalization.
- (2) Explain conversion from un-normalized data to 1st Normal form.

OR

Answer the following :

- (1) Explain types of anomalies with examples.
- (2) Explain functional dependency with suitable examples.

- (B) Explain conversion from 1st Normal form to 2nd Normal form with appropriate example. 6

OR

Explain conversion of 2nd Normal form to 3rd Normal form with appropriate example.

5. Answer the following : 14

- (1) The group of related records is known as _____.
- (2) The same data are unnecessarily stored at different places is called _____.
- (3) _____ exists when different and conflicting versions of the same data appear in different places.
- (4) _____ is an attribute or combination of attributes used strictly for data retrieval process.
- (5) _____ describes the characteristics of an entity.
- (6) _____ is an attribute whose value is calculated from other attributes.
- (7) In table each column has specific range of values known as _____.
- (8) _____ operator combines all rows from two tables, excluding duplicate rows.
- (9) An entity is said to be _____ if it can exist in database only when another related entity occurrence.
- (10) The _____ provides a detailed description of all tables found within the database.
- (11) Each table must have an attribute or group of attributes that uniquely identify each row. (True/false)
- (12) The process of Normalization increases the number of anomalies. (True/False)
- (13) Data Dictionary and system catalog both have same meta data. (True/False)
- (14) Weak Relationship is also known as non-identifying relationship. ((True/False)