

[4661] - 302

S.Y. M.C.A. (Engineering)
DATABASE MANAGEMENT SYSTEM
(2013 Course) (Semester - III) (410902)

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right side indicate full marks.*
- 3) *Assume Suitable data if necessary.*

- Q1) a) Define DBMS. Describe Advantages and Disadvantage of it. [4]
b) Explain data models with example. [4]

OR

- Q2) a) Explain architecture of database. [4]
b) Explain Data Abstraction in detail. [4]

- Q3) a) Explain Following: [4]
i) Entity
ii) Attributes
iii) Keys
iv) Constraints
b) Define ER diagram. Explain its components. [4]

OR

- Q4) a) Explain difference between ER diagram and EER diagram. [4]
b) Construct an ER diagram for computer institute which having one or more number of students. Each student taught by a teacher. [4]

P.T.O.

Q5) a) Explain any 4 Codd's rules with example. [4]

b) What is referential integrity? Explain with example. [4]

OR

Q6) a) Explain following concepts: [4]

i) DDL

ii) DML

iii) DCL

b) What is index? How index are created and dropped. [4]

Q7) a) Write PL/SQL block to fetch marks of 3 subjects of student 'Nikita'. [4]

b) Write a cursor to calculate total number of rows. [4]

OR

Q8) a) Display power and square Root of any number, Substring 'Shikshan' of string 'Rayat Shikshan Sanstha', Length of string 'Dr. Abdul Kalam'. [4]

b) Write a function for factorial of a number. [4]

Q9) a) What is Normalization? Explain 3 NF with suitable example. [4]

b) The closure set F of functional Dependencies for relation schema [4]

$R = (A, B, C, D, E)$ is

$A \rightarrow BC$

$CD \rightarrow E$

$B \rightarrow D$

$E \rightarrow A$

List Candidate key for R.

OR

- Q10)a) Explain Database Design Methodology with example. [4]
b) Explain functional Dependencies with appropriate example. [4]

Q11) List Building blocks of HBASE and Explain HBASE Architecture with neat diagram. [10]

OR

- Q12)a) What is Big Data? Explain with example. [5]
b) What is difference between Relational and Non-Relational database. [5]

