

**B.TECH SEM – IV(2007 COURSE) (INF. TECH.) : SUMMER -
2018**

SUBJECT: DATABASE MANAGEMENT SYSTEM

Day : **Thursday**
Date : **07/06/2018**

Time: **10.00 AM TO 01.00 PM**
Max. Marks: 80

S-2018-2627

N. B.:

- 1) **Q. No.1 and Q. No.5 are COMPULSORY.** Out of the remaining attempt **ANY TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both sections should be written **SEPARATE** answer book.
- 4) Assume suitable data if necessary.
- 5) Use non- programmable **CALCULATE** is allowed.

SECTION-I

- Q.1** a) Draw symbols and explain following used in E-R diagram. **(05)**
i) Weak entity ii) Primary key attribute
iii) composite attribute iv) derived attribute
- b) How relational calculus is different from relational algebra? Explain with example. **(05)**
- c) Explain any four aggregate functions. **(04)**
- Q.2** a) Write characteristics that distinguish the database approach with file based approach. **(07)**
- b) Explain relational and hierarchical data model. **(06)**
- Q.3** a) Explain about various key used in database system. **(07)**
- b) State BCNF. How it is different from 3NF? **(06)**
- Q.4** a) Explain with suitable example the JOIN operation in relational algebra also explain its types. **(07)**
- b) Consider following relational database schema. **(06)**
Emp (emp_no, emp_name).
Assignd_to (emp_no, proj_no)
Project (project_no, project_name).
Write following SQL queries with appropriate data
i) Select name of employee working on project_name= 'boiler manufacturing'
ii) Find Project name and Project_no for which 'Mr. John' is working.

SECTION-II

- Q.5** a) What are ACID properties? **(05)**
b) Enlist different file operations and explain any two. **(05)**
c) Explain data mart in brief. **(04)**
- Q.6** a) With suitable diagrams explain about RAID levels, (Level 0, level 1 and level 0+1). **(07)**
b) Explain in detail about B1 tree index and B tree index files. **(06)**
- Q.7** a) Explain time stamp based protocol for concurrency control in DBMS. **(07)**
b) Explain the ARIS recovery control method. When does a system recover from a crash? In what order must transaction be in done and redone. **(06)**
- Q.8** a) Write note on multimedia database. **(07)**
b) Write note on star and snow flake schema with example. **(06)**

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