

Code No: 54013

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD

B.Tech II Year II Semester Examinations, May - 2015

DATABASE MANAGEMENT SYSTEMS

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

1. a) Explain the following.
i) Database Administrator iii) Data base languages.
b) What is DBMS? What are the advantages of Data Base Management Systems? [8+7]
2. a) What is E-R Model? Draw an E-R Diagram for any Banking system.
b) Define generalization and specialization? How it is represented in E-R Model? [7+8]
3. a) What is Relational Model? Explain about various domain and integrity constraints in Relational Model with examples.
b) Let $R = (ABC)$ and let r_1 and r_2 both relations on schema R . Give an expression in the domain relational calculus that is equivalent to each of the following.
i) $\prod_{A1}(r_1)$ ii) $\sigma_{p=19}(r_1)$ iii) $r_1 \cap r_2$ iv) $r_1 - r_2$ [9+6]
4. a) Explain the following Operators in SQL with examples.
i) SOME ii) NOT IN iii) IN iv) EXCEPT
b) What is Trigger? Explain how to implement Triggers in SQL with example. [8+7]
5. a) What is normalization? Explain 3NF BCNF and 4NF Normal forms. What is the difference between 3NF and BCNF Normal forms.
b) Explain what are the problems caused by redundancy and decomposition of relation. [8+7]
6. a) What is locking Protocol? Describe the *Strict Two Phase locking Protocol*? What can you say about the schedules allowed by this protocol?
b) Explain the *Time Stamp - Based Concurrency Control* protocol? How is it used to ensure serializability? [7+8]
7. a) What is log file? Explain about the Check point log based recovery scheme for recovering the database.
b) Explain about the Advance recovery system. [9+6]
8. a) Explain the cluster index, primary and secondary indexes with examples.
b) What is indexing? Explain what are the differences between tree based index and Hash based index. [7+8]