

Hall Ticket Number:

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Code No. : 33011

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
**MCA (CBCS) III-Semester Main Examinations, December-2018**

**Database Management Systems**

Time: 3 hours

Max. Marks: 60

*Note: Answer ALL questions in Part-A and any FIVE from Part-B*

Q. No	Stem of the Question	M	L	CO	PO
<b>Part-A (10 × 2=20 Marks)</b>					
1.	Explain about Data Abstraction and Database languages.	2	2	1	1
2.	Draw an ER-Diagram depicting Roles and primary key.	2	2	1	1
3.	Differentiate between candidate key and super key.	2	3	2	1
4.	What are the integrity constraints in SQL?	2	2	2	1
5.	Define multi-valued dependency.	2	1	3	1
6.	What is trigger? What are the parts of Trigger?	2	1	3	1
7.	Define B+ index with example.	2	1	4	1
8.	Illustrate atomicity and durability properties of Transactions.	2	2	4	1
9.	List various storage structures.	2	2	5	1
10.	How is dirty page table useful?	2	2	5	1
<b>Part-B (5 × 8 = 40 Marks)</b>					
11. a)	Define DBMS. What are the advantages of DBMS over conventional file system?	3	2	1	1
b)	Draw an ER-Diagram for Library Management system	5	4	1	4
12. a)	What are the nested queries? How would you use the Operators IN, EXISTS, UNIQUE and ANY in writing nested queries?	4	2	2	1
b)	Describe the Relational Algebra operations with examples.	4	2	2	1
13. a)	What is Normalization? What is the difference between 3NF and BCNF	3	2	3	4
b)	Write a trigger program for student database - when the user tries to enter the subject marks more than maximum (100) marks in student database immediately the trigger will alert with the following message "your entered subject marks is more than maximum marks (100)".	5	5	3	4
14. a)	Discuss how to implement Dynamic hashing with example.	5	3	4	1
b)	Explain about conflict serializability and view serializability.	3	2	4	1
15. a)	Describe the multi-version concurrency control protocol. What are its benefits and disadvantages in comparison to locking protocols?	5	5	5	1
b)	What is log file? What is role of log file in database recovery?	3	3	5	1
16. a)	Define generalization, specialization and aggregation? How it is represented in E-R Model.	3	2	1	1
b)	Briefly discuss various types of joins with examples.	5	2	2	1

17. Answer any <i>two</i> of the following:				
a) What is the maximum Normal form satisfy the relation scheme R=(ABCD) with following Functional dependencies F.D{AB→C, C→D }	4	4	3	4
b) What is Dead Lock? Explain the deadlock prevention mechanisms	4	2	4	1,2
c) What is role of Compensation Log Records and Write-Ahead Logging protocol in recovery of the database	4	2	5	1,2

M: Marks; L: Bloom's Taxonomy Level; CO: Course Outcome; PO: Programme Outcome

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	60
2	Knowledge on application and analysis (Level-3 & 4)	28
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	12

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