

MSc. III(DS)/01.22.003

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M.Sc. COMPUTER SCIENCE WITH SPECIALISATION IN DATA SCIENCE

THIRD SEMESTER EXAMINATION, JANUARY 2022

20-359-0311 NO SQL DATABASE

(Regular)

Time : 3 Hours

Maximum Marks:50

(Answer ANY FIVE questions)
Each question carries EQUAL Marks.

Q.No	QUESTIONS	MARKS
1.	(a) Consider a supermarket scenario where data mining on bills can be used to increase the business. Explain the steps involved in that by providing discount for shaving cream and blade as a pack.	5
	(b) Concurrency is a must thing in transaction handling. Do you agree with the statement? Justify your answer with explaining any two concurrency issue on transactions.	5
2.	(a) One of your friends is curious about the growth of database system. With a time line diagram explain the same to him/her.	5
	(b) "Primary, secondary and tertiary data storage are different in terms of volume as well as need." Comment on the statement with proper justification.	5
3.	"Relational databases have become such an embedded part of our computing culture." Justify this statement with explaining the benefits of relational database.	10
4.	(a) Explain about the emergence of NOSQL database.	5
	(b) What are the difference between NOSQL and relational databases?	5
5.	(a) Explain the concept of sharding with example.	2
	(b) Differentiate between master slave replication and peer to peer replication.	2

	(c)	<p>Consider the following data:</p> <p>Database: company</p> <p>Collection: employee</p> <p>Documents: Six documents that contains the details of the employees</p> <pre>> db.employee.find() { "_id" : ObjectId("60192cb40cf217478ba935a2"), "name" : "eren", "age" : 25, "rank" : 1 } { "_id" : ObjectId("60192cb40cf217478ba935a3"), "name" : "mikasa", "age" : 24, "rank" : 2 } { "_id" : ObjectId("60192cb40cf217478ba935a4"), "name" : "jean", "age" : 26, "rank" : 4 } { "_id" : ObjectId("60192cb40cf217478ba935a5"), "name" : "conny", "age" : 23, "rank" : 7 } { "_id" : ObjectId("60192cb40cf217478ba935a6"), "name" : "sasha", "age" : 25, "rank" : 6 } { "_id" : ObjectId("60192cb40cf217478ba935a7"), "name" : "armin", "age" : 24, "rank" : 3 } ></pre> <p>Create a mapreduce function for finding the sum of ranks grouped by ages.</p>	6																																									
6.	(a)	Mention the key components in HBase.	2																																									
	(b)	Differentiate between HBase and relational database.	2																																									
	(c)	<p>The table <i>employee</i> is given below. Write the command to perform the following operations.</p> <p>I. Modify the Designation of <i>EMP-002</i> to <i>Jr. Assistant</i>.</p> <p>II. Add new data with following details.</p> <p><i>EMP-005, Mary Green, Adyar Street, Tamil Nadu</i></p> <p>III. Delete the table <i>employee</i>.</p> <table><tr><th rowspan="2">Row- Key</th><th colspan="2">Name</th><th colspan="2">Address</th><th colspan="2">Department</th></tr><tr><th>F.Name</th><th>L.Name</th><th>Street</th><th>State</th><th>Designation</th><th>DepartmentName</th></tr><tr><td>EMP-001</td><td>Bill</td><td>Green</td><td>Commercial Street</td><td>Karnataka</td><td>Jr. Assistant</td><td>Marketing Department</td></tr><tr><td>EMP-002</td><td>John</td><td>White</td><td>Chickpet Street</td><td>Maharashtra</td><td>Sr. Assistant</td><td>Marketing Department</td></tr><tr><td>EMP-003</td><td>Jane</td><td>Brown</td><td>Adyar Street</td><td>Tamil Nadu</td><td>Sr. Assistant</td><td>Finance Department</td></tr><tr><td>EMP-004</td><td>Jack</td><td>Black</td><td>Avenue Street</td><td>Karnataka</td><td>Sr. Assistant</td><td>Finance Department</td></tr></table>	Row- Key	Name		Address		Department		F.Name	L.Name	Street	State	Designation	DepartmentName	EMP-001	Bill	Green	Commercial Street	Karnataka	Jr. Assistant	Marketing Department	EMP-002	John	White	Chickpet Street	Maharashtra	Sr. Assistant	Marketing Department	EMP-003	Jane	Brown	Adyar Street	Tamil Nadu	Sr. Assistant	Finance Department	EMP-004	Jack	Black	Avenue Street	Karnataka	Sr. Assistant	Finance Department	6
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