Register Number:……..

KUMARAGURU college of technology
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B.E/B. TECH DEGREE EXAMINATIONS: NOV/DEC 2022

(Regulation 2018)

Fifth Semester

COMPUTER SCIENCE AND ENGINEERING

U18CSI5203: No SQL Databases

COURSE OUTCOMES

CO1: Outline fundamental concepts in the context of a number of different NOSQL products.[K3]
CO2: Construct refined logical database model with consideration of data semantics and dependency.[K4]
CO3: Build a database system and demonstrate competence with the fundamental tasks involved with its modeling, designing, and implementation.[K4, S2]
CO4: Examine MongoDB tools to develop and deploy various applications.[K5, S3]

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Compare RDBMS and NoSQL based on their storage management.	CO1	[K_2]
2.	Outline the advantage of MongoDB.	CO1	[K_2]
3.	Consider the database of school students which consists of the Name, Age, Gender, and Class of each student. Write a query that displays the details only the male students of class greater than 7 and less than 8.	CO2	[K_3]
4.	Identify the syntax to insert and sort the document in MongoDB.	CO2	[K_3]

5.	Consider a collection named **products** that holds documents that resemble the following document:
	{
	"_id": ObjectId(...),
	"item": "Banana",
	"category": ["food", "produce", "grocery"],
	"location": "4th Street Store",
	"stock": 4,
	"type": "cases"
	}
	Write a query to create an ascending index on the **item** and **stock** fields.
		CO3	[K_3]

6.	Infer the GeoJSON object types to specify GeoJSON data.	CO3	[K_3]
7.	List the components of Membase architecture	CO4	[K_1]
8.	Identify the tool/product used for data importation from RDBMS to NoSQL and state its capabilities.	CO4	[K_3]

9.		Write a PHP script to create a database in MongoDB, insert the record (Name and Mailid of the student) and fetch the details.	CO4	[K_3]
10.		Write the command to install pymango, show available databases and collections	CO4	[K_3]

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

11.	a)	Classify the types of NoSQL databases with their characteristics.	CO1	[K_2]
	b)	Explain the Apache web server Combined Log Format for storing and accessing the data from MongoDB.	CO1	[K_2]
12.	a)	Outline the NoSQL storage architecture with a neat sketch.	CO2	[K_2]
	b)	Illustrate the CRUD Operation with an example.	CO2	[K_2]
13.	a)	Interpret the MongoDB utilities for exporting and importing data from and into MongoDB respectively with a syntax.	CO3	[K_2]
	b)	Illustrate how to create unique and sparse indexing in MongoDB with an example. Exemplify how to perform indexing and ordering in COUCHDB and CASSANDRA	CO3	[K_2]
14.	a)	Outline the basic request-response communication between a client and a MongoDB server through the MongoDB Wire Protocol format.	CO4	[K_2]
	b)	Interpret the Django architecture, components and benefits.	CO4	[K_L]
15.	a)	Construct PHP code to Connect MongoDB with PHP and to perform the following operations. a. create a collection in MongoDB b. insert a document in MongoDB c. select all documents from the collection. d. update a document in the collection.	CO4	[K_3]
	b)	Build a Python web application to store the Book details in MongoDB and display all the details of the book. Book Details: Title, Author1, Author2, year_of_publication, book_price.	CO4	[K_5]
16.	a)	Interpret how large-scale web applications can be built with NoSQL using Rails and Django with an example.	CO4	[K_3]
	b)	Illustrate the HBASE architecture and brief about each component of the architecture with appropriate graphical representation	CO3	[K_2]

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