M. Sc. DEGREE EXAMINATION, NOVEMBER 2024
BIOINFORMATICS
FIRST SEMESTER

COURSE   : **CORE**
PAPER   : **DATABASE MANAGEMENT SYSTEMS**
SUBJECT CODE   : **23BI/PC/DB14**
TIME   : **1 ½ HOURS**   **MAX. MARKS: 50**

Q. No.	SECTION A (10 X 1=10 MARKS) ALL QUESTIONS TO BE ANSWERED (OBJECTIVE TYPE)	CO	KL
1.	Which `grep` option displays the line numbers of matching lines? a) -n b) -l c) -v d) -i	CO1	K1
2.	Which symbolic mode command grants write permissions to the group? a) chmod g-x filename b) chmod g+w filename c) chmod g-w filename d) chmod g+r filename	CO1	K1
3.	Which of the following is a common type of index structure used for files? a) Array b) Heap c) Linked list d) B-tree	CO1	K2
4.	Which of the following statements about Boyce-Codd Normal Form (BCNF) is true? a) A relation in BCNF can have partial dependencies b) BCNF allows for transitive dependencies c) Every relation in BCNF is also in 3NF A relation in BCNF can have partial dependencies d) BCNF is a stricter version of 2NF	CO1	K2
5.	Which type of join returns all records from the left table and the matched records from the right table? a) Inner Join b) Right Join c) Left Join d) Full Join	CO1	K1
6.	What happens when a referential integrity constraint is violated? a) The database will automatically delete the affected records b) An error is raised, and the operation is rejected c) The operation is allowed, but a warning is issued d) The records are stored without any reference	CO1	K1
7.	What distinguishes a super key from a primary key? a) A super key cannot have any null values b) A primary key can reference multiple tables, while a super key cannot. c) A super key must consist of at least two attributes. d) A primary key is a type of super key that is minimal	CO1	K1
8.	In a NoSQL database, data is often stored in which of the following formats? a) Tables b) Rows and columns c) JSON or XML documents d) Flat files	CO1	K2

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9.	Which of the following is a key advantage of using MongoDB for genomic data storage? a) Fixed schema b) Inability to handle large data sets c) Flexible schema allowing for various data types d) Limited querying capabilities	CO1	K2
10.	When creating a MongoDB database for UniProt, what is an essential step? a) Defining a fixed schema b) Limiting data types to integers and strings c) Normalizing all data into separate tables d) Importing data using bulk operations	CO1	K1
Q. No.	**SECTION B** **(10 X 2= 20 MARKS)** **ANSWERS IN ABOUT 50 WORDS**	**CO**	**KL**
11	Mention the text editors available in Linux OS.	CO2	K3
12	What command is used to run the bash script?	CO3	K4
13	Name the types of Data Languages.	CO2	K3
14	List the advantages of DBMS.	CO3	K4
15	Explain the difference between single row functions and group functions in SQL, providing an example of each.	CO2	K3
16	Give an example for subquery along with the general syntax.	CO2	K3
17	Explain the types of DBMS.	CO3	K4
18	Compare and contrast the primary key and candidate key.	CO3	K4
19	Mention the key steps involved in Web development with MongoDB.	CO3	K4
20.	Distinguish JSON and BSON format.	CO3	K4
Q. No.	**SECTION C** **(4 X 5= 20 MARKS)** **ANSWER IN ABOUT 500 WORDS - INTERNAL CHOICE**	**CO**	**KL**
21	a) Brief in detail about changing the access rights in Linux OS. **(or)** b) Discuss on B+Tree.	CO4	K5
22.	a) Enhance the key features of Constraints in the DBMS integrity. (**or)** b) Elucidate the various Database Normalisation in detail.	CO5	K6
23.	a) Describe the importance of E-R model with the schematic representation. **(or)** b) Elaborate the multi-model database in NoSQL.	CO4	K5
24.	a) Illustrate with an example for Multiple and Correlated Subqueries. **(or)** b) Highlight the importance of MongoDB or Redis for Biomedical data.	CO5	K6

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