BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Tech.(CSE)-DS-2021/B.Tech.(CSE)-DS-2022
Course Name – Intelligent Database System
Course Code - PEC-CSD602A
(Semester VI)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) _____is the primary goal of Predictive Analytics in an Intelligent Database System

a) Identifying patterns and trends in data
b) Storing large volumes of data
c) Real-time data processing
d) Managing database transactions

(ii) State the role does Clustering play in an Intelligent Database System

a) Enhances data security
b) Identifies patterns and trends in data
c) Organizes data into groups based on similarities
d) Speeds up data retrieval

(iii) State the contribution of Big Data to the capabilities of an Intelligent Database System

a) Optimizes indexing techniques
b) Enhances data security measures
c) Handles and analyzes large volumes of diverse data
d) Improves data retrieval speed

(iv) State the primary advantage of using an Intelligent Database System in decision-making processes

a) Increased data redundancy
b) Reduced operational costs
c) Improved data security
d) Enhanced ability to analyze and predict outcomes

(v) _____query language is commonly used for interacting with databases in an Intelligent Database System

a) HTML
b) Java
c) SQL
d) Python

(vi) State the primary function of an "Expert System" in an Intelligent Database System

a) Handling database transactions
b) Optimizing indexing techniques
c) Mimicking human expertise in decision-making
d) Improving data retrieval speed

(vii) Select the term refers to the process of arranging data in a specific order to speed up data retrieval in an Intelligent Database System

a) Indexing
b) Clustering
c) Data Warehousing
d) Archiving

(viii) State how does Real-Time Data Processing benefit an Intelligent Database System

a) Enhances data security measures
b) Allows for instant analysis and decision-making
c) Optimizes indexing techniques
d) Reduces data redundancy

(ix) State what distinguishes a semi-structured database from a traditional relational database?

a) Semi-structured databases lack a schema.
b) Semi-structured databases store data in tables.
c) Semi-structured databases allow for flexible data representation.
d) Semi-structured databases do not support querying.

(x) Identify which approach is typically used to address information retrieval problems in unstructured data?

a) Keyword-based searching
b) Structured query language (SQL) queries
c) Relational database management systems (RDBMS)
d) Decision trees

(xi) Choose the action word is relevant to the concept of skip pointers in information retrieval

a) Evaluate
b) Analyze
c) Retrieve
d) Remember

(xii) State the role of document delineation play in user interaction

a) Enhancing search precision
b) Improving indexing efficiency
c) Facilitating user feedback
d) Providing autocomplete suggestions

(xiii) List the action word is associated with determining the vocabulary of terms

a) Store
b) Retrieve
c) Analyze
d) Remember

(xiv) Identify which of the following represents a higher level of intelligence in an intelligent database?

a) Data Retrieval
b) Pattern Recognition
c) Predictive Analysis
d) Contextual Understanding

(xv) Choose the option that document frequency represent in information retrieval

a) The frequency of a term within a document
b) The number of documents containing a term
c) The length of a document
d) The importance of a term in a document collection

Group-B

(Short Answer Type Questions) 3 x 5=15

2. How Information Retrieval (IR) works in Intelligent Database System? (3)
3. What you understand by Term Document Incident Matrix. (3)
4. Explain how do skip pointers contribute to reducing the time complexity of postings list intersection. (3)
5. Explain term frequency (TF) and its role in determining the relevance of documents. (3)
6. Analyze the primary purpose of advertising in the economic model. (3)

OR

Analyze the importance of index distribution in search engine architecture. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Illustrate the concepts of query processing, relevance ranking in Information Retrieval (IR) system. (5)
8. What is the significance of scoring in Information Retrieval? (5)
9. Estimate how document delineation contributes to the efficiency of document retrieval in intelligent databases. (5)
10. Discuss the significance of statistical properties of terms such as term frequency (TF) and inverse document frequency (IDF) in information retrieval (5)
11. Examine the role of user interaction in case of Information Retrieval (IR) system. (5)
12. Explain the processing of Boolean Queries in Information Retrieval systems. (5)

OR

Give an example of a real-life information retrieval problem and explain it. (5)

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