BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – B.Tech.(CSE)-DS-2021/B.Tech.(CSE)-DS-2022/B.Tech.(CSE)-DS-2023
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) Select the component that allows an Intelligent Database System to store and manage historical data efficiently

a) Indexing b) Data Mining
c) Archiving d) Transactions

(ii) In an Intelligent Database System, the term "Data Redundancy" refers to

a) Efficient data storage b) Repeating data in multiple tables for optimization
c) Reducing data security measures d) Speeding up data retrieval

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

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

(iv) 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

(v) State the technique involves in ensuring that data in an Intelligent Database System is not accessible to unauthorized users

a) Data Mining b) Data Encryption
c) Predictive Analytics d) Query Optimization

(vi) In an Intelligent Database System, the term "Data Normalization" refer to_____

a) Efficient data storage b) Reducing data redundancy by organizing data
c) Real-time data processing d) Enhancing data retrieval speed

(vii) Identify the primary purpose of "Data Cleansing" in an Intelligent Database System

a) Efficient data storage b) Real-time data processing

c) Removing inconsistencies and errors from data
d) Enhancing data retrieval speed

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

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

(ix) State the primary function of character sequence decoding in information retrieval systems

a) To identify relevant documents
b) To interpret user queries
c) To organize document collections
d) To process textual data

(x) Choose the primary objective of faster postings list intersection using skip pointers

a) To increase the size of the index
b) To decrease the efficiency of search operations
c) To reduce the time complexity of intersection
d) To prioritize certain documents over others

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

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

(xii) Choose the component of information retrieval that is directly impacted by character sequence decoding

a) Relevance ranking
b) Query processing
c) User interaction
d) Indexing

(xiii) State he primary goal of document delineation

a) To evaluate document relevance
b) To decode character sequences
c) To identify document structures
d) To improve query processing

(xiv) In information retrieval, identify what does inverse document frequency measure

a) Document popularity
b) How unique a term is across documents
c) User engagement
d) Semantic relationships between terms

(xv) Identify which statistical property helps in identifying the importance of a term across a document collection?

a) Term frequency
b) Document length
c) Inverse document frequency
d) User preferences

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Explain the concept of crawling in the context of search engines. (3)
3. Discuss how does TF-IDF contribute to document ranking in information retrieval systems (3)
4. Discuss the purpose of term weighting in the Vector Space Model (3)
5. State the recent trends in IT that emphasizes data privacy and security? (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. Describe document collection, indexing in Information Retrieval (IR) system (5)
8. Illustrate the concepts of query processing, relevance ranking in Information Retrieval (IR) system. (5)
9. How has the evolution of Information Technology impacted Intelligent Databases? (5)
10. Explain the three levels of intelligence and define the terms corpus, information need, and relevance in the context of information retrieval. (5)

11. Discuss the concept of faster postings list intersection via skip pointers in intelligent database systems (5)
12. Analyze and explain the role of connectivity servers in the infrastructure of search engines and analyze how do they facilitate the operation of search engine components (5)

OR

Analyze how do search engines estimate the relevance of indexed documents to user queries and discuss the key factors and techniques involved in relevance estimation. (5)

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