

Reg. No.

Question Paper Code

13486

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Sixth Semester

Artificial Intelligence and Data Science

(Common to Computer Science and Engineering (AIML))

20AIEL603 - INFORMATION RETRIEVAL TECHNIQUES

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

	Marks	K – Level	CO
1. Which system uses Message Passing? (a) Centralized system (b) Distributed system (c) Mainframe system (d) Batch system	1	K1	CO1
2. The retrieval process starts with: (a) Document storage (b) Query formulation (c) Result ranking (d) Data compression	1	K1	CO1
3. In a probabilistic model, documents are ranked based on: (a) Size (b) Score (c) Probability (d) Length	1	K1	CO2
4. Structured text retrieval models are suited for: (a) Plain text (b) Semi-structured data (c) Binary data (d) Images	1	K1	CO2
5. Query Expansion helps in: (a) Reducing documents (b) Narrowing the query (c) Broadening the query (d) Compressing data	1	K1	CO3
6. Which operation refines search results by user input? (a) Query expansion (b) Query compression (c) Query hiding (d) Query encryption	1	K1	CO3
7. SVM stands for: (a) Support Vector Machines (b) Structured Vector Model (c) Simple Vector Method (d) Scalar Vector Management	1	K1	CO4
8. Which is not a clustering method? (a) K-means (b) DBSCAN (c) Naive Bayes (d) Agglomerative Clustering	1	K1	CO4
9. Link analysis is used to determine: (a) Page size (b) Page importance (c) Page format (d) Page storage	1	K1	CO5
10. Distributed IR helps in: (a) Local search (b) Searching across multiple machines (c) Single-machine search (d) Compression	1	K1	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11. List two open-source IR systems.	2	K1	CO1
12. Mention two key characteristics of the Web affecting IR.	2	K1	CO1
13. Name two probabilistic models in IR.	2	K1	CO2
14. Mention the purpose of scoring and ranking in IR.	2	K1	CO2
15. Define query expansion.	2	K1	CO3
16. Differentiate between sequential searching and pattern matching.	2	K2	CO3
17. Define text classification.	2	K1	CO4
18. Define hierarchical clustering.	2	K1	CO4
19. What is web crawling?	2	K1	CO5
20. Mention two challenges in XML retrieval.	2	K1	CO5
21. List two examples of features used in image retrieval systems.	2	K1	CO6

22. Define stop word removal in indexing. 2 K1 CO6

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23. a) Describe in detail about the Architecture of Information Retrieval. 11 K1 CO1

OR

b) List the components of Information Retrieval and Search engine in detail. 11 K1 CO1

24. a) Examine the Boolean and Vector Space model with an example. 11 K3 CO2

OR

b) Demonstrate the Algebraic models and Set Theoretic Models with an example. 11 K3 CO2

25. a) Compare and Contrast relevance feedback and query expansion. 11 K2 CO3

OR

b) Describe automatic global analysis in query processing. 11 K2 CO3

26. a) Describe in detail about the SVM-based classification model. 11 K2 CO4

OR

b) Explain the latent semantic indexing to reduce dimensionality of document vectors. 11 K2 CO4

27. a) Illustrate about the XML retrieval query with an example. 11 K2 CO5

OR

b) Explain the structure of the Web and its impact on information retrieval. 11 K2 CO5

28. a) Compare and contrast XPath and XQuery for XML information retrieval. Provide examples of their use in querying XML documents. 11 K2 CO6

OR

b) Explain with examples how partitioning, distributed indexing, and merging strategies help in scaling information retrieval across massive datasets like the web. 11 K2 CO6