PVP 23

Code: 23AM3501

III B.Tech - I Semester - Regular Examinations - NOVEMBER 2025

INFORMATION RETRIEVAL SYSTEMS
(CSE - AIML)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

		BL	CO
1.a)	Write short note on digital libraries.	L2	CO1
1.b)	Differentiate between data retrieval and information retrieval.	L2	CO1
1.c)	Mention one advantage and one limitation of signature files.	L2	CO1
1.d)	What is an inverted file in information retrieval system?	L2	CO1
1.e)	Define stoplist with an example.	L2	CO1
1.f)	Explain position based and context aware index.	L2	CO1
1.g)	How does stemming help in compressing inverted files?	L2	CO1
1.h)	List any two features of a thesaurus.	L2	CO1
1.i)	Define prefix function in KMP algorithm.	L2	CO1
1.j)	What is the principle of the shift-OR algorithm?	L2	CO1

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	Explain in detail about the four major functional processes in information retrieval systems.	L2	CO1	5 M
	b)	Differentiate Data Base Management System and Information Retrieval System.	L2	CO1	5 M
OR					
3	a)	Describe an inverted index and its role in storing and retrieving document-term information in IR systems.	L2	CO1	5 M
	b)	Explain IR system evaluation using precision, recall, F1 score and MAP with examples.	L2	CO1	5 M
UNIT-II					
4	a)	Explain about Dictionary and Posting list in an inverted index.	L2	CO1	5 M
	b)	Illustrate the process of building an inverted file using a sorted array with an example dataset.	L3	CO2	5 M
OR					
5	a)	Explain how signature file techniques can be modified to reduce false positives. Justify.	L4	CO4	5 M

	b)	Distinguish between vertical and horizontal partitioning in signature files with an example.	L2	CO1	5 M
UNIT-III					
6	a)	Demonstrate how the N-gram data structure helps in handling spelling errors.	L2	CO1	5 M
	b)	Describe the structure and applications of hypertext data structures in IR.	L2	CO1	5 M
OR					
7	a)	Explain different types of linkages used in indexing systems.	L2	CO1	5 M
	b)	Compare and Contrast manual indexing and automatic indexing.	L4	CO4	5 M
UNIT-IV					
8	a)	Analyze the differences between over stemming and under stemming.	L4	CO4	5 M
	b)	Describe the effect of stemming on inverted file structure.	L2	CO1	5 M
OR					
9	a)	Analyze the challenges of constructing a thesaurus from domain-specific texts.	L4	CO4	5 M
	b)	Compare and Contrast stemming and lemmatization with examples.	L4	CO4	5 M
UNIT-V					
10	a)	Explain the concept of pattern, text, shift and match with example.	L2	CO1	5 M

	b)	Using the Shift-Or algorithm, demonstrate the matching process for the pattern “101” in the text “1001011”.	L3	CO3	5 M
OR					
11	a)	Analyze the bit-parallelism concept in the Shift-Or algorithm.	L4	CO4	5 M
	b)	Explain the significance of string searching algorithms in computer science and mention at least two real-world applications.	L2	CO1	5 M