



*R22 Regulation* *Subject code: 4P6HE*  
**TKR COLLEGE OF ENGINEERING AND TECHNOLOGY**  
 (Autonomous, Accredited by NAAC with 'A+' Grade)

**B.Tech VI Semester Supplementary Examinations, November 2025**  
**INFORMATION RETRIEVAL SYSTEMS**  
**(CSE(DS))**

**Maximum Marks: 60**

**Date: 15.11.2025**

**Duration: 3 hours**

- Note:**
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

**Part-A**

All the following questions carry equal marks (10X1M=10 Marks)		Marks	CO	Bloom Tx
1.a)	Define an Information Retrieval System.	1M	1	1
b)	Compare information retrieval system and data base management system.	1M	1	4
c)	Examine the main challenges in XML retrieval.	1M	2	4
d)	Identify the following query "Find employees whose salary is the same this month as it was 12 months ago" is text centric or data centric XML retrieval.	1M	2	3
e)	Discuss any two properties of Naive Bayes model	1M	3	2
f)	List out any four feature selection methods.	1M	3	1
g)	Identify common issues in the classification of text documents	1M	4	2
h)	How clustering helps in information retrieval?	1M	4	4
i)	What is DNS resolution?	1M	5	1
j)	List the essential features that a web crawler should have to efficiently retrieve information from the web	1M	5	1

**Part-B**

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
2	Discuss the major functional process of information and storage retrieval systems. How do these processes contribute to efficient information retrieval?	10M	1	2
<b>OR</b>				
3	Illustrate any three search capabilities provided by Information Retrieval Systems. Provide real-world examples for each capability to demonstrate their practical applications.	10M	1	3
4	Describe the basic concepts of XML and provide an example illustrating the use of XML for structured data representation.	10M	2	2
<b>OR</b>				
5	Explain how the Vector Space Model is applied in XML retrieval. Discuss its advantages and limitations in this context.	10M	2	2

6	Compare and contrast the Rocchio classifier and the k-Nearest Neighbors (kNN) classifier. Explain the working principles of each, and provide a suitable example.	10M	3	4
	OR			
7	Discuss about text classification. Consider a scenario where you are building a classifier to decide if a word is English or not using the following word probabilities: “ozb” and “uzu” are non-English (4/9 each), while “zoo” and “bun” are English (1/18 each). Use a multinomial Naive Bayes model with letters b, n, o, u, z as features. (i) Compute the priors and conditional probabilities with smoothing: zero probabilities become 0.01, others stay the same. (ii) Use the model to classify the word “zoo.”	10M	3	3
8	Discuss how SVM handles both linear and non-linear classification problems and mention its applications in real-world problems.	10M	4	2
	OR			
9	Compare and contrast flat and hierarchical clustering with suitable example	10M	4	4
10	Illustrate basic crawl architecture and Explain the process of web crawling in information retrieval.	10M	5	2
	OR			
11	Discuss about a) Near-duplicates and shingling      b)Page rank	6M 4M	5	2