Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025

Date: 09- 12-2025 **Time:** 01:00pm – 04:00pm

School: SOCSE	**Program**: B.TECH	
Course Code: CSE2051	**Course Name:** Information Retrieval	
Semester: VII	**Max Marks**: 100	**Weightage**: 50%

CO - Levels	CO1	CO2	CO3	CO4
Marks	26	26	24	24

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **10Q x 2M=20M**

1.	What is the purpose of indexing in IR?	**2 Marks**	**L1**	**CO1**
2.	What is Information Retrieval?	**2 Marks**	**L1**	**CO1**
3.	Define a Document Collection.	**2 Marks**	**L1**	**CO1**
4.	Discuss about search engine.	**2 Marks**	**L1**	**CO2**
5.	Discuss any two limitations of the Vector space model.	**2 Marks**	**L1**	**CO2**
6.	What is meant by document ranking?	**2 Marks**	**L1**	**CO2**
7.	Discuss about tokenization?	**2 Marks**	**L1**	**CO3**
8.	Define stemming and lemmatization.	**2 Marks**	**L1**	**CO3**
9.	List any two applications of recommender systems.	**2 Marks**	**L1**	**CO4**
10.	What is the difference between implicit and explicit feedback?	**2 Marks**	**L1**	**CO4**

Part B

Answer the Questions. **Total Marks 80M**

11.	**a.**	**Describe the** functional blocks **of an IR system — document processing, query processing, and ranking.**	**10 Marks**	**L2**	**CO1**
	b.	Demonstrate the **goals and challenges** in building an Information Retrieval system.	**10 Marks**	**L3**	**CO1**
		Or			
12.	**a.**	Explain the **architecture of an Information Retrieval System** with a neat diagram and describe each component.	**10 Marks**	**L2**	**CO1**
	b.	Discuss applications of Information Retrieval in fields like healthcare, e-commerce, and digital libraries.	**10 Marks**	**L2**	**CO1**
13.	**a.**	Describe **Basic** IR model working mechanism and its types.	**10 Marks**	**L2**	**CO2**
	b.	Demonstrate the neural network–based IR models with its advantages.	**10 Marks**	**L3**	**CO2**
		Or			
14.	**a.**	**Describe the** Boolean **approach and its advantages in detail.**	**10 Marks**	**L2**	**CO2**
	b.	Given the following data for a collection of 3 documents: **Term** / **Doc1 (count)** / **Doc2 (count)** / **Doc3 (count)** data 3 0 2 mining 1 2 0 retrieval 0 1 3 Compute the TF, IDF, and TF-IDF for each term in each document. *(Use base 10 log for IDF = log (N / df))*	**10 Marks**	**L3**	**CO2**
15.	**a.**	**Construct an inverted index for the following documents:** • D1: "Information retrieval is important." • D2: "Retrieval of information requires indexing." • D3: "Indexing improves search efficiency." Discuss about inverted index working mechanism.	**10 Marks**	**L3**	**CO3**
	b.	Explain, how queries are processed in search engine?	**10 Marks**	**L2**	**CO3**
		Or			
16.	**a.**	Explain about Multi-dimensional indexing with suitable example.	**10 Marks**	**L2**	**CO3**
	b.	What is search engine? Explain the architecture of search engine in detail.	**10 Marks**	**L2**	**CO3**
17.	**a.**	Describe the content-based recommendation approach in detail.	**10 Marks**	**L3**	**CO4**
	b.	Demonstrate the architecture and working of a recommender system.	**10 Marks**	**L3**	**CO4**
		Or			
18.	**a.**	Compare and contrast collaborative filtering and content-based recommendation.	**10 Marks**	**L2**	**CO4**
	b.	Describe the different types of recommender systems with examples.	**10 Marks**	**L2**	**CO4**