



## COMPUTER SCIENCE AND ENGINEERING

### QUESTIONBANK

**Course title: INFORMATION RETRIEVAL SYSTEMS**

**Course code: CS3115PE**

**Regulation: NR21**

#### **Course Objectives**

- To acquire the knowledge in measurement to information and errors.
- Understand the importance of various codes for communication systems
- To design encoder and decoder of various codes.
- To know the applicability of source and channel codes

#### **Course Outcomes (CO's)**

CO1: Understand IR Principles to locate relevant information in large collection of data.

CO2: Apply retrieval systems for web search tasks.

CO3: Analyse different document clustering algorithms.

CO4: Design an Information Retrieval System for web search task.

CO5: Identify different Retrieval System and apply text search algorithms.

### UNIT-I

S.No	Questions	CO	BT	PO
<b>Part – A (Short Answer Questions)</b>				
1	define information retrieval system?	CO1	L1	PO1
2	what are the two measures with an information retrieval systems?	CO1	L1	PO4
3	Write about selective dissemination of information?	CO1	L2	PO1
4	write short notes on types of index files ?	CO1	L1	PO3
5	write brief note on digital libraries?	CO1	L1	PO3
6	define proximity function ?	CO1	L1	PO4
7	write about masking?	CO1	L1	PO4
8	list four major fictional processes in information storage and retrieval systems?	CO1	L3	PO1
9	explain difference between data retrieval and information retrieval?	CO1	L1	PO1
10	define highlighting?	CO1	L1	PO3
<b>Part – B (Long Answer Questions)</b>				
11	a) discuss the objective s of information retrieval systems?	CO2	L1	PO2
	b) What are the two measures associated with an information retrieval systems? Give the conditions under which 100% precision and recall are achieved. Also derive the relationship between these measure and user Overhead?	CO1	L1	PO3

12	a)	Explain in detail about the four major functional processes in information retrieval systems?	CO1	L1	PO4
	b)	Write brief note on digital libraries and data warehouses?	CO2	L1	PO1
13	a)	discuss about search capabilities in information retrieval systems?	CO1	L1	PO2
	b)	What are browse capabilities in information retrieval systems explain in detail?	CO2	L1	PO7
14	a)	Explain in detail about miscellaneous capabilities??	CO1	L1	PO1
	b)	Explain in detail about I) Document database search II) index database search III) Multimedia database search?	CO1	L2	PO1
15	a)	Difference between database and information Retrieval systems?	CO1	L1	PO2
	b)	Bring out the relationship between information retrieval systems and database management systems?	CO2	L2	PO2
16	a)	Explain in detail precision and recall ?	CO1	L1	PO3
	b)	Explain in detail index database search ?	CO1	L2	PO2

## UNIT-II

S.No	Questions		CO	BT	PO
<b>Part – A (Short Answer Questions)</b>					
1		Define indexing and list types of indexing ?	CO2	L1	PO6
2		Define automatic indexing?	CO2	L1	PO9
3		What is unweighted indexing?	CO1	L1	PO1
4		Discuss about information extraction?	CO1	L2	PO1
5		Define I) over generation II) Fallout?	CO1	L1	PO2
6		What are dictionary look-up structures?	CO1	L2	PO3
7		Define inverted file structure?	CO1	L1	PO3
8		Write short notes on N - gram data structure?	CO1	L1	PO1
9		Write short notes on successor structures?	CO1	L1	PO1
10		Define indexing and explain about it?	CO1	L1	PO1
<b>Part – B (Long Answer Questions)</b>					
11	a)	Explain in detail the indexing process for information retrieval systems with neat diagram?	CO1	L1	PO1
	b)	Discuss the different classes of automatic indexing?	CO1	L2	PO1
12	a)	Give a brief explanation on the two major data structures used in any information systems?	CO1	L1	PO1
	b)	Explain in detail dictionary look-up structures?	CO2	L1	PO2
13	a)	Explain in detail successor structures?	CO2	L1	PO4
	b)	Explain in detail inverted file structure?	CO1	L1	PO4
14	a)	Describe in detail N - gram model?		L2	
	b)	What is signature file structure and explain how it is useful in IRS?	CO2	L2	PO2
15	a)	Explain in detail hypertext data structures?	CO1	L1	PO2
	b)	Give brief introduction on XML and features XML?	CO1	L1	PO1
16	a)	Write definition of signature file structure ? Text-This is text A text has many words, words are made from letters Hash values $h(\text{text})=000101$ $h(\text{many})=110000$	CO2	L4	PO1

	h(words)=100100 h(made)=001100 h(letters)=100001 identify h(made)value ?			
b)	Explain the porter stemming algorithm?	CO2	L2	PO2

### UNIT-III

S.No	Questions	CO	BT	PO
<b>Part – A (Short Answer Questions)</b>				
1	What is automatic indexing?	CO3	L1	PO4
2	list the steps of data flow in information process ?	CO3	L2	PO4
3	Write short notes on statistical indexing?	CO3	L1	PO2
4	Write short notes on concept indexing ?	CO3	L1	PO3
5	What is clustering?	CO1	L1	PO1
6	Write short note on hypertext linkages ?	CO3	L1	PO3
7	write short note on I)kwoc II)kwic III) kwac?	CO1	L1	PO1
8	What is manual Clustering ?	CO3	L1	PO1
9	)What is, 1) Word Frequency (WF) ii) Total Frequency (TF) iii) Document Frequency (DF).?	CO3	L1	PO1
10	explain about item clustering?	CO3	L2	PO2
<b>Part – B (Long Answer Questions)</b>				
11	a) Explain in detail different classes of automatic indexing?	CO3	L1	PO3
	b) Discuss statistical type of indexing method in detail?	CO3	L2	PO2
12	a) What do you mean by natural language processing explain in detail?	CO3	L1	PO1
	b) Explain in detail about concept indexing?	CO3	L1	PO9
13	a) Explain briefly about hypertext linkages?	CO1	L1	PO8
	b) Define clustering. Explain the process of clustering in information systems and its types?	CO3	L1	PO9
14	a) What is difference between document clustering and term clustering?	CO1	L1	PO1
	b) Explain in detail thesaurus generation ?	CO3	L1	PO1 1
15	a) Explain about automatic term clustering?	CO1	L1	PO2
	b) Explain in detail about cluster hierarchy?	CO2	L2	PO9
16	a) explain in detail I) document clustering II) term clustering III )item clustering?	CO3	L1	PO4
	b) What is mean by automatic indexing? Discuss about statistical indexing and concept indexing?	CO3	L1	PO2
		CO3	L1	PO8

## UNIT-IV

S.No	Questions	CO	BT	PO
<b>Part – A (Short Answer Questions)</b>				
1	Write short notes on search statement. List three levels of binding?	CO3	L1	PO2
2	What is similarity measure?	CO3	L2	PO1
3	Write short note on Ranking algorithms.	CO3	L2	PO2
4	What is selective dissemination of information?	CO3	L1	PO4
5	Explain relevance feedback in information retrieval systems?	CO1	L1	PO3
6	Define information visualization?	CO3	L1	PO9
7	Write short notes cognition?	CO1	L2	PO8
8	Explain jaccard similarity measure with formula?	CO3	L1	PO2
9	Write short notes on internet and hypertext?	CO4	L2	PO9
10	Explain Dissimilarity measure with formula?	CO4	L1	PO1
<b>Part – B (Long Answer Questions)</b>				
11	a) What are search statements and why there are three levels of binding in the creation of search?	CO4	L1	PO1
	b) Explain in detail similarity measures?	CO4	L2	PO2
12	a) Explain in detail about the various ranking algorithms ?	CO4	L1	PO4
	b) What is Relevance feedback and explain the positive and negative feedback on retrieval strategy?	CO4	L1	PO9
13	a) Explain in detail about dissemination systems?	CO4	L1	PO9
	b) Explain in detail weighed searches of Boolean systems?	CO4	L1	PO5
14	a) Explain in detail information visualization?	CO4	L1	PO4
	b) Give a brief account on cognition and perception	CO3	L1	PO1
15	a) Discuss various information visualization technologies	CO3	L1	PO1
	b) Explain in detail searching the INTERNET and Hypertext?	CO3	L1	PO1
16	a) Explain in detail about Relevance feedback?	CO4	L1	PO9
	b) list and explain the six key characteristics of intelligent agents in internet and hypertext?	CO4	L1	PO2

## UNIT-V

S.No	Questions	BT	CO	PO
<b>Part – A (Short Answer Questions)</b>				
1	Explain the software text search techniques?	CO3	L1	PO2
2	Define finite state automata?	CO3	L2	PO3
3	Write short notes on hardware text search algorithm?	CO4	L1	PO2
4	What is brute force approach?	CO3	L1	PO5
5	Explain about graph retrieval?	CO3	L1	PO6
6	Write brief note on spoken language audio retrieval?	CO4	L1	PO2
7	Write short note on graph retrieval?	CO4	L1	PO7
8	Explain about topic detection and tracking(TDT)?	CO3	L1	PO9
9	Write short note non-speech audio Retrieval?	CO3	L1	PO2
10	Explain video Retrieval?	CO4	L1	PO9

<b>Part – B (Long Answer Questions)</b>					
11	a)	Explain in detail about software text search algorithms?	CO4	L1	PO2
	b)	Explain in detail about hardware text search systems?	CO4	L1	PO9
12	a)	Describe in detail multimedia information retrieval?	CO3	L1	PO7
	b)	Explain in detail spoken language audio retrieval?	CO3	L2	PO3
13	a)	Discuss in brief about non-speech audio retrieval ?	CO4	L2	PO4
	b)	Explain in detail graph retrieval?	CO4	L2	PO4
14	a)	Discuss in brief imagery retrieval?	CO3	L1	PO8
	b)	Explain in detail video retrieval ?	CO3	L1	PO9
15	a)	Discuss in brief about non-speech audio retrieval and graph retrieval?	CO4	L1	PO2
	b)	Draw and explain the streaming architecture?	CO4	L3	PO4

\* **Blooms Taxonomy Level (BT)** (L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analyzing; L5 – Evaluating; L6 –Creating)

**Course Outcomes**

**(CO) Program**

**Outcomes (PO)**

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**HOD, CSE**

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## NARSIMHA REDDY ENGINEERING

MODEL QUESTION PAPER

COLLEGE(UGC AUTONOMOUS)

III B.Tech I Semester (NR20) Regular Examination, February 2023

**INFORMATION RETRIEVAL SYSTEM**  
(CSE / Common to Branch Names – CS/DS/AI&ML/CSE)

Time :3 hours

Maximum marks: 70

- Note:**
- This question paper contains two parts A and B
  - Part A is compulsory which carries 20 marks (10 sub questions are two from each unit carry 2 Marks). Answer all questions in Part A
  - Part B Consists of 5 Units. Answer any one full question from each unit. Each question carries 10 Marks and may have a, b sub questions

**Part-A** **(20 Marks)**  
**Answer all questions**

Q.No	Question	M	CO	BL	PO
1)	a. write short notes on types of index files ?	2	CO1	L1	PO3
	b. What are the two measures with information retrieval systems?	2	CO1	L1	PO4
	c. Discuss about information extraction?	2	CO1	L2	PO1
	d. define I) over generation II) Fallout?	2	CO1	L1	PO2
	e. What is automatic indexing?	2	CO3	L1	PO4
	f. Write short notes on statistical indexing?	2	CO3	L1	PO2
	g. Define information visualization?	2	CO3	L1	PO9
	h. Explain jaccard similarity measure with formula?	2	CO3	L1	PO2
	i. Write brief note on spoken language audio retrieval?	2	CO4	L1	PO2
	j. Write short notes on hardware text search algorithm?	2	CO2	L2	PO3

**Part-B** **(50 Marks)**  
**Answer any five questions All**  
**Questions carry equal Marks**

Q.No	Question	M	CO	BL	PO
<b>UNIT-I</b>					
2)	a. Explain in detail about the four major functional processes in information retrieval systems?	5	CO1	L1	PO4
	b. What are browse capabilities in information retrieval systems explain in detail?	5	CO2	L1	PO7
<b>OR</b>					
3)	a. explain in detail about I) Document database search II) index database search III) Multimedia database search?	5	CO1	L2	PO1
	b. Explain in detail about miscellaneous capabilities??	5	CO1	L1	PO1
<b>UNIT-II</b>					
4)	a. Explain in detail inverted file structure?	5	CO1	L1	PO4
	b. Write definition of signature file structure ? Text-This is text A text has many words, words are made from	5	CO2	L4	PO1

		letters Hash values h(text)=000101 h(many)=110000 h(words)=100100 h(made)=001100 h(letters)=100001 identify h(made)value ?				
<b>OR</b>						
5)	a.	Explain in detail dictionary look-up stammers?	5	CO2	L1	PO2
	b.	Explain in detail successor stammers?	5	CO2	L1	PO4
<b>UNIT-III</b>						
6)	a.	explain in detail different classes of automatic indexing	5	CO3	L1	PO3
	b.	Define clustering. Explain the process of clustering in information systems and its types?	5	CO3	L1	PO9
<b>OR</b>						
7)	a.	Explain in detail different classes of automatic indexing?	5	CO3	L1	PO3
	b.	What is difference between document clustering and term clustering?	5	CO1	L1	PO1
<b>UNIT-IV</b>						
8)	a.	What are search statements and why there are three levels of binding in the creation of search?	5	CO4	L1	PO1
	b.	Explain in detail about the various ranking algorithms ?	5	CO4	L1	PO4
<b>OR</b>						
9)	a.	Explain in detail information visualization?	5	CO4	L1	PO4
	b.	What is Relevance feedback and explain the positive and negative feedback on retrieval strategy	5	CO4	L1	PO9
<b>UNIT-V</b>						
10)	a.	Explain in detail about software text search algorithms?	5	CO4	L1	PO2
	b.	Explain in detail spoken language audio retrieval?	5	CO3	L2	PO3
<b>OR</b>						
11)	a.	Draw and explain the steaming architecture?	5	CO4	L3	PO4
	b.	Explain in detail about hardware text search systems?	5	CO4	L1	PO9

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**M** – Marks      **CO** – Course Outcomes      **PO** – Program Outcomes

**BL** – Bloom's Taxonomy Levels (**L1**–Remembering, **L2**–Understanding, **L3**–Applying,**L4**–Analyzing, **L5**–Evaluating, **L6**–Creating)