

23/11/2023  
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Sr. No. 013512

December 2023

B.Tech. (ME) Re-Appear 5th Semester

WEB TECHNOLOGY AND INFORMATION RETRIEVAL (OEC-ME-504)

Time: 3 Hours

Max. Marks:75

- Instructions:**
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
  2. Answer any four questions from Part -B in detail.
  3. Different sub-parts of a question are to be attempted adjacent to each other.

**PART -A**

- Q1 (a) Define information retrieval. What are its applications? (1.5)  
(b) Define indexing & document indexing. (1.5)  
(c) What are the components of search engine? (1.5)  
(d) Define precision and recall. (1.5)  
(e) What is Zipf's law? (1.5)  
(f) What are challenges of web? (1.5)  
(g) How can we represent the queries in Boolean model? (1.5)  
(h) How tf and idf is calculated? (1.5)  
(i) What are advantages and disadvantages of query processing? (1.5)  
(j) Differentiate between http and secure http. (1.5)

**PART -B**

- Q2 (a) What is a web server? How publishing is done on web server? Name any two web servers. (10)  
(b) What is HTML? Why it is needed? What are tags and attributes? (give example) (5)
- Q3 (a) What is the use of DNS resolver? (5)  
(b) What is a web crawler? How it works? Explain its various types. (10)
- Q4 Explain Blocked sort-based indexing and Single-pass in memory indexing in detail. (15)
- Q5 Differentiate between the following: (5x3)  
I. Extended Boolean model VS ranked retrieval  
II. Bi word indexes and positional indexes  
III. Distributed and dynamic indexing
- Q6 (a) Explain the concept of inverted file index. How it can be used in IR. (5)  
(b) Suppose the table given below lists all the documents retrieved by an algorithm. If total number of relevant documents is 6, calculate the value of recall, precision, and F-score. (10)

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S.no	Document ID	Relevant
1	D1	No
2	D2	No
3	D3	Yes
4	D4	No
5	D5	Yes
6	D6	Yes
7	D7	No
8	D8	No
9	D9	Yes

Q7 Write short note on any *three* the following: (5x3)

- I. Page Rank
- II. File compression
- III. Combinational schemes
- IV. Secure Socket Layer

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