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University Examinations 2023/2024

THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF INFORMATION SCIENCE

CIS 3358: ADVANCED INFORMATION RETRIEVAL

DATE: APRIL 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer Question *one* and any other *two*

QUESTION ONE (30 MARKS)

- a) Define the following terms (10 Marks)
- i) Information retrieval
 - ii) Multimedia
 - iii) Indexing
 - iv) Search engines
 - v) Protocols
- b) Describe the two methods of accessing information resources especially in journals (4 Marks)
- c) Explain the four disadvantages of Boolean model (4 Marks)
- d) Expound on the steps used in keyword searching (6 Marks)
- e) Discuss what a database is and explain Two types of databases (6 Marks)

QUESTION TWO (20 MARKS)

- a) Explain in detail at least Four differences between information and data retrieval (8 Marks)
- b) Describe Five differences between human and automatic indexing (5 Marks)

- c) With an aid of a diagram explain the information retrieval process (7 Marks)

QUESTION THREE (20 MARKS)

- a) Define a Common Gateway Interface (CGI) and further explain its Five features (7 Marks)
- b) Describe the Three basic phases in the processes of an information retrieval system (6 Marks)
- c) Explain the Seven evaluation criteria for evaluating information retrieval systems (7 Marks)

QUESTION FOUR (20 MARKS)

- a) Discuss three types of controlled vocabularies and explain their purposes in information retrieval (7 Marks)
- b) State and explain the three techniques in multimedia content searching and retrieval (6 Marks)
- c) Describe the Three types of information retrieval models (7 Marks)

QUESTION FIVE (20 MARKS)

- a) Discuss comprehensively protocol Z39.50, explaining its goal and how its importance in information retrieval (6 Marks)
- b) State the explain the Four rules and functions that regulate or control decision making in the fuzzy logic system (6 Marks)
- c) In explaining the performance measures, the following data was retrieved in a database (8 Marks)

- i) Documents retrieved 200
- ii) Relevant documents 350
- iii) Relevant document retrieved 180
- iv) Total number of document in the information retrieval system 500

Required: clearly showing the used formulas calculate the precision, recall and fallout ratio