



MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

UNIVERSITY POSTGRADUATE EXAMINATION

2018/2019 ACADEMIC YEAR

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR PHD IN
INFORMATION TECHNOLOGY**

SIT 704 – INFORMATION RETRIEVAL

DURATION: 2 HOURS

DATE: 13/5/2019

TIME: 2-5 P.M.

Instructions to candidates:

1. Answer **ANY FOUR** Questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

QUESTION ONE (25 MARKS)

- a) With an aid of a diagram explain the document retrieval system architecture. (8 marks)
- b) Compare the merits of information retrieval verses web search in identifying the relevant information by users' request. (10 marks)
- c) Briefly explain the role of each components of information retrieval in achieving the desired output (7 marks)

QUESTION TWO (25 MARKS)

- a) Write short notes on how Boolean and vector retrieval models enhance information retrieval. (10 marks)
- b) Discuss how the widely open source license has impacted the information retrieval. (10 marks)
- c) Briefly explain about the roles of web-page pre-processing. (5 marks)

QUESTION THREE (25 MARKS)

- a) Discuss the impact of the web in information retrieval with its architecture. (10 marks)
- b) With the aid of a diagram explain web crawling architecture in detail. (10 marks)
- c) Explain briefly the roles of each component of search engines. (5 marks)

QUESTION FOUR (25 MARKS)

- a) Explain in details about web search engine optimization techniques. (10 marks)
- b) Discuss how page ranking is performed in web search and state its limitation. (10 marks)
- c) Write short notes on the following in relation to information retrieval. (5 marks)
 - i. Snipped generation.
 - ii. Summarization.
 - iii. Question answering.

QUESTION FIVE (25 MARKS)

- a) Use an example of your choice to explain how agglomeration hierarchical clustering works. (10 marks)
- b) Develop an algorithm for classification using decision tree. Illustrate the algorithm with a relevant example. (10 marks)
- c) Write short notes on expectation maximization problem. (5 marks)