

(2 ½ Hours)

[Total Marks: 75]

- N.B. 1) All questions are compulsory.
 2) Figures to the right indicate marks.
 3) Illustrations, in-depth answers and diagrams will be appreciated.
 4) Mixing of sub-questions is not allowed.

Q. 1 Attempt ANY FOUR from the following: (20M)

- Define Information Retrieval (IR) and explain its goals.
- How are documents represented in an IR system? Discuss different term weighting schemes.
- Describe the Boolean model in Information Retrieval. Discuss Boolean operators and query processing.
- Write a short note on Vector space model.
- What is edit distance, and how is it used in measuring string similarity? Provide examples.
- What is Experimental design and significance testing.

Q. 2 Attempt ANY FOUR from the following: (20M)

- Write a short note on support vector machine.
- Explain K-means clustering technique.
- State the challenges in web search.
- What is the role of crawler in information retrieval? How does it accomplish its task?
- List link analysis algorithms and write the applications of link analysis.
- Discuss pairwise learning.

Q. 3 Attempt ANY FOUR from the following: (20M)

- What is text summarization? Explain extractive summarization.
- Discuss web crawling techniques.
- Write a short note on user based collaborative filtering.
- State the techniques and applications of cross-lingual retrieval.
- Briefly explain Surveys in information retrieval.
- Explain Near-duplicate page detection algorithms.

Q. 4 Attempt ANY FIVE from the following: (15M)

- Discuss storage mechanisms for indexed documents.
- What are the Techniques used for spelling correction in IR systems.
- Explain Cosine Similarity in Information Retrieval.
- Briefly explain RankBoost Algorithm.
- How to handle dynamic web content during crawling in IR system.
- Write a short note on Test collections and benchmarking.
