

INDIAN STATISTICAL INSTITUTE
THIRD SEMESTER EXAMINATION, 2024/26 SESSION
PAPER - 11: INFORMATION RETRIEVAL
(MASTER IN LIBRARY INFORMATION SCIENCE)
07 September 2026 (11:30-13:00) (90 Minutes)

This Question paper consists of a page. **Attempt Questions to score maximum marks.** Please print all your answers in the Answer Booklet provided. Scientific Calculator is allowed.

- Q1.** For the spatial function shown in Figure 1, compute and plot the histogram. Further, convert the data to binary form by using the mean value as the threshold. **[10 marks]**

2	7	6	5	7
11	9	15	10	16
11	9	14	9	12
6	14	7	11	7
7	9	10	14	11

Figure 1

- Q2.** Explain the document summarization via the K-Mixture model (a probabilistic approach) briefly. Explain every parameter in the formula used in the calculation of probability of the word W_i that appears k times in a document by using the K-mixture. **[10 marks]**
- Q3.** Explain the f - α spectra (Multifractal Spectra) computation with a relevant example and the importance of such a spectra in understanding the complexity of data. **[10 marks]**
- Q4.** Compute Moran's Index (MI) for a data set of your choice, and explain the relevance of MI in the context of Information Retrieval. **[15 marks]**

END OF PAPER.