

## Rubric of the Project-1

Instructions:

- The students has to submit the project in the form of **.pdf** on LMS on or before October 29, 2022 (11:00 AM).
- Students also has to submit the matlab codes (**.m files**) on the LMS along with project submission.
- The interviews will be conducted on October 29, 2022 at 02:00 PM in Room No:-1102 (For section L1) and in Room:-1104 (For section L2).

Following is the Rubric decided for the grading of Project-1.

### **Problem 1.**

Expressing the given problem as an eigenvalue-eigenvector problem in the form  $G\vec{v} = \vec{v}$ . → 0.5 marks

### **Problem 2.**

Writing a MATLAB code for finding and printing the eigenvalues and eigenvectors of the matrix  $G$  → 1 marks

Writing a MATLAB code to check whether the given matrix  $G$  is diagonalizable or not → 0.5 marks

### **Problem 3.**

Writing a MATLAB code to rank the given web-pages using power method. → 1.5 marks

Sorting the pages with top most page as rank 1 and printing the page numbers (page 1, page 2, ...) along with their ranks. → 0.5 marks

For which value of  $k$ , the vector  $\vec{v}_{k+1}$  becomes stationary along with the pre-defined tolerance. → 0.5 marks

Deducing the relationship between obtained eigenvector in Problem 1 and stationary value obtained → 0.5 marks

### **Problem 4.**

Framing the given situation into Mathematical model. → 0.5 marks

Rank the pages in this new web-portal using power method → 0.5 marks

Deducing the difference between the ranking of web-pages obtained in Problem 3 and Problem 4. → 0.5 marks

### **Problem 5.**

Framing the given situation into Mathematical model. → 0.5 marks

Discuss the applicability of the methodology defined in Problem 1. → 1 marks

Proposal of methodology that helps to rank the pages. → 1 marks

Rank the web-pages with the proposed methodology. → 1 marks