

**Indian Institute of Information Technology Allahabad**  
**Linear Algebra**  
**Computational Project-II**

Program: B.Tech. 1<sup>st</sup> Semester

Deadline: **September 17, 2024 by 07:00 PM**

Full Marks: 10

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**Instructions:** Let **Num** = the last three digits of your enrollment no.

$$\text{Assigned question} = \begin{cases} Q.1 & \text{if } \mathbf{Num} = 3n \text{ for some non-negative integer } n, \\ Q.2 & \text{if } \mathbf{Num} = 3n + 1 \text{ for some non-negative integer } n, \\ Q.3 & \text{if } \mathbf{Num} = 3n + 2 \text{ for some non-negative integer } n. \end{cases}$$

Find your **Assigned question** according to your enrollment number, and do the same.

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- Q.1* Write a code for Laplace expansion (cofactor expansion) of the determinant of a square matrix.
- Q.2* Compute the determinant of a square matrix using the Leibniz formula and any computer program (C/C++/MATLAB).
- Q.3* Write a code in C/C++/MATLAB to find the solution of a system of linear equations by Cramer's rule.