Lesson Plan – June 1st – 15th

Group: 12th

Subject: Mathematics

Topic: Matrices (Chapters 20, 21, 22)

Date: June 1st – June 15th 2020

Instructional Objectives:

- Understand the representation of data in the form of a matrix and identify various types of matrices
- Perform simple operations on matrices: addition, subtraction and multiplication
- Find the inverse of a matrix using elementary transformations
- Calculate the determinant of a given square matrix
- Evaluate determinants using their properties
- Apply determinants and their properties in solving certain geometrical problems
- Find the inverse of a matrix using determinants
- Solve a system of linear equations using matrices

Teaching Process:

Background Context:

The student is familiar with the matrix representation and simple operations on matrices from his 10th IGCSE syllabus.

Teaching:

Teaching will be blackboard-based, working out example and exercise problems together. The student will be assigned homework on a regular basis to practice with different types of problems related to the topic

If face-to-face classes are not feasible, we will have online classes using Zoom or similar software. I will also narrow down on a suitable digital mode in lieu of the physical blackboard and share worked out examples with the student

The syllabus text by itself is highly method-based, so the student will also be encouraged to watch informational videos on the applications of matrices. Even though these videos may

deal with matrices at a level beyond the required syllabus, they will help provide some relevance for the work that we will be doing with matrices.

Resources required:

Textbooks:

- The NIOS Mathematics Textbook 2 for Senior Secondary classes will be used as the main textbook
- The IGCSE Mathematics textbook will be used for revision of matrices by the student
- ISC Mathematics Book II, for Class XII (O.P. Malhotra et. al.) will be used as an additional reference by the teacher for problems

Youtube Video:

- Essence of Linear Algebra by 3Blue1Brown (applications of Matrices in Vector transformation)

Online Classes:

Depending on the lockdown extension, the student may be required to log into online sessions for classes.

Evaluation tools:

Understanding of the topic will be evaluated through classroom interactions, homework corrections and a written test at the end of the topic

Modifications: Special Needs

Not required for the student this year

Suggestions:

Getting the student to read up and work out a topic before coming to the class, significantly helped in completing the topic ahead of time. It helped the student understand the basics on his own and come to class, prepared with doubts

Self-Reflection:

To be filled post-lesson, for the teacher's reference.