Maximum Marks: 15

Due Date: June 14, 2020

INSTRUCTIONS

Please read the following instructions before attempting the solution of this assignment:

- To solve this assignment, you should have good command over **8 to 12** Lectures.

- Try to get the concepts, consolidate your concepts which you learn in these lectures with these questions.

- Upload assignments properly through LMS. **No Assignment will be accepted through email.**

- Write your ID on the top of your solution file.

- Do not use colorful backgrounds in your solution files.

- Use **Math Type or Equation Editor** etc. for mathematical symbols and equations.

- **Zero marks** will be awarded for a copied solution. That is if the solution files of any two students are found same, both of them will be awarded zero marks. Therefore, try to make solution by yourself and protect your work from other students.

- Avoid copying the solution from book (or internet); you must solve the assignment yourself.

- Also remember that you are supposed to submit your assignment in **Word format** any other format like scanned images, HTML etc. will not be accepted

Note: Attempt all the following questions.

Let $I = (x^3z^2, x^2z^3, xyz, y^2)$ and $J = (x^4y^3, x^3y^5, x^2z^2, xyz, y^4z^3, y^2z^4)$ be two ideals in $\mathbb{R}[x, y, z]$.
Calculate the minimal set of generators of $I + J$.

Let $I = (x^3, xy, y^4)$ and $J = (x^2, xy^2)$ be two ideals in $\mathbb{R}[x, y]$. Calculate the minimal set of generators of IJ.

Let $I = (xy^2, y^3, xz)$ be an ideal in $\mathbb{R}[x, y]$. Calculate the minimal set of generators of I^2 and I^3.