

PHD Admission IIT Ropar(2023)

There is 7 member in my interview panel.

First, they take my introduction. After Introduction, they ask what you prepare for interview. My answer was I prepare Real analysis and Linear Algebra. Then one of them say but your area of research is numerical Analysis and you prepare other topics.

My interview goes in Real and Numerical analysis.

1) What is bounded Variation.

I give the answer correctly. Then they ask some example based on definition of Bounded variation. Like What is the bounded variation of $\sin x$ in $[-\pi, \pi]$ and variation of $f(x)=x^2$ in $[0, 2]$.

I don't know the answer they give me hint like you can take idea from Graph. Till that time I understand the idea behind this problem how to find.

2) Define Pointwise convergence and uniform convergence.

3) What is the difference between these two term.

Now, another professor start asking questions from Numerical analysis.

They ask first like do u know how to solve system of linear equation.

I simply say yes.

Then they ask let us suppose there is system of linear equation of order 1000×1000 . Then how you find the solution.

I say for solving this problem I prefer to use Indirect Method(Iterative Method).

Then they ask what is the difference between these two methods.

I give the answer.

Then they ask which Iterative method do u want to use.

I answer I use Jacobi Iterative or Gauss Seidel iterative method.

They ask which one you prefer to use and why.

I give the answer as simple as possible.

Then they ask some question like you have given a 2×2 diagonalizable matrix then how you find A^{10} .

I simply answer its similar to Diagonal matrix and by using this we find.

Then they ask do u study decomposition.

I introduce some Matrix Decomposition like LU, QR, SVD.

Then they ask some Question based on SVD.

Last question they ask about how to find the bound of largest eigen value.

I don't know the exact answer. I answer By using Gershgorin Theorem we give the bound. This is my last question.

Overall my experience there was good. All the professors are supportive during interview.

THANK YOU

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