Computer Science & Engineering Department
I. I. T. Kharagpur

Principles of Programming Languages: CS40032
Elective

Assignment – 5: Type Systems   *Marks: 25*

Assign Date: *27th March, 2022*   Submit Date: *23:55, 3rd April, 2022*

Instructions: Please solve the questions using pen and paper and scan the images. Every image should contain your roll number and name.

1. What is Type Error? What is Type System? What are the advantages of Type System?   **[5]**

2. What is *Type Inference*? Give an example of *Type Inference* by Hand-weaving. Write a Type Inference Algorithm for Polymorphic function: func (f,x) = f x.   **[5]**

3. Describe *Type Inference Algorithm* in detail. Frame and solve a *Type Constraints* using a Matrix.   **[5]**

4. Give an example of *Overload Resolution* with one parameter.   **[5]**

5. Explain in brief *Parametric Polymorphism*. What is *rvalue* reference? Explain with example.   **[5]**