

Answer Sheets for CHE654 Homework Set #6 (100 Points)

Note: For all problems, submit a copy of your process flow diagram and a copy of your input summary of the process.

46. (25 points) *Flowsheet Convergence, III*

Answer the following questions:

(a) Number of irreducible groups = _____

The blocks in each group are:

The tear streams in each group are:

(b) Split fraction in Block B1 going to Stream 2 = _____

Is the design-spec loop nested inside or outside one of the tear stream loops? Check one.

Inside Outside

(c) Level 3 convergence scheme: _____

47. (25 points) *Flowsheet Convergence, IV*

Answer the following questions:

(a) Ethane feed flow in Stream 1 = _____ lbmol/hr

Split fraction of Stream 5 in Block B2 = _____

Number of irreducible groups = _____

The blocks in each group are:

The tear streams in each group are:

Simulation time in CPU seconds: _____

(b) Briefly write down your two schemes:

Scheme 1: _____

CPU seconds of Scheme 1: _____

Scheme 2: _____

CPU seconds of Scheme 2: _____

49. (25 points) Flowsheet Convergence, VI

Answer the following questions:

(a) i) Your convergence scheme:

Tear streams: _____

Convergence algorithm: _____

ii) Ratio of the total molar flow of stream R2 to that of stream R3 = _____

(b) i) Your convergence scheme:

Tear streams: _____

Convergence algorithm for tear streams: _____

Convergence algorithm for design-spec: _____

Nesting or simultaneous convergence? _____

If nesting, the nesting order: _____

ii) Vapor fraction in Flash-3 = _____

50. (25 points) Flowsheet Convergence, VII

Answer the following question:

(a) Flow rate of Stream P-1 = _____ lbmol/hr

(b)

Your convergence scheme:

Split fraction going to Stream 19 in Block B10 = _____ %