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QUESTION 4: Power Factor vs. speed characteristics for EE and SE Motor:  
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4.a) Power factor at start-up

Power factor at start-up for EE motor: 0.4194

Power factor at start-up for SE motor: 0.4286

4.b) Power factor at max torque

Power factor at max torque for EE motor: 0.7200

Power factor at max torque for SE motor: 0.7197

4.c) Power factor at no-load

Power factor at no-load for EE motor: 0.0198

Power factor at no-load for SE motor: 0.0295

This is as expected, the PF under no-load is very low, because the current is mostly reactive (magnetizing current), and the real power is minimal since there is no load.

The best PF for the EE motor (from the graph) is: 0.847859

The best PF for the SE motor (from the graph) is: 0.820597

The speed at best PF for the EE motor (from the graph) is: 1363.5 rpm

The speed at best PF for the SE motor (from the graph) is: 1356.75 rpm