**Schrage: A**

1. Verification of Riley’s result (Fig. 21) **Full marks**

Sensitivity for p, R0, r, g, 1-N, ±20% **Full marks**

Relative sensitivity of various parameters **Full marks**

Comparison to Riley’s 27% error **Have you tried interpolating your model**

**solution into the same time grid as the observations prior to computing the error?**

2. Conditions for P to be periodic **Full marks**

Find a value of g that ensures periodicity **Full marks**

How does the value vary as other parameters are changed? **Full marks**

3. Perturb the periodic model with 20% random variations in Z and discuss

**Full marks. Note that in some cases P can show a long-term secular increase. The random term means that ln P(t+1yr) deviates from ln P(t) by a random number with zero mean. As a result, ln P(n\*yr) undergoes a random walk and can reach very high or very low values. This points to the need for nonlinearity in the dynamics.**