Solutions

2.1

- Complement C5–9 ✓.

2.2

- ~6 months: maternal IgG protection wanes ✓.

2.3

- Hyperacute (pre-formed antibody) ✓.

3.1

- B-cell arm failure (XLA pattern): no plasma cells → no IgG.
- Timing: placental IgG protected until ~5–6 months ✓.
- Confirm: immunoglobulins (all low), B-cell count (absent CD19/20); treat with replacement immunoglobulin.

3.2

- Acute cellular rejection: recipient T cells recognise allo-MHC, infiltrate and destroy tubules.
- Calcineurin inhibitor (tacrolimus/ciclosporin) blocks IL-2 transcription – the co-stimulated signal's product.
- Months of creeping dysfunction with proteinuria = chronic rejection (antibody + vascular scarring) ✓.