Solutions

2.1

- Ca^{2+} through voltage-gated channels; SNARE proteins fuse the vesicle ✓.

2.2

- Ionotropic: channel opens in milliseconds; metabotropic works via G-proteins in seconds ✓.

2.3

- The receptor's channel – GABA-A passes Cl^{-} (inhibition), AMPA passes Na^{+} (excitation) ✓.

3.1

- Botulinum: no vesicle fusion → no release → flaccid ✓.
- Curare: release normal, receptor blocked → flaccid ✓.
- Tetanus: inhibitory release blocked → unopposed excitation → spastic ✓.
- The NMJ safety factor (~50–300 vesicles to threshold) means weakness needs most receptors occupied ✓.

3.2

- Step six – termination by reuptake is blocked ✓.
- Cleft serotonin persists longer and at higher concentration ✓.
- Synthesis (step three's loading of vesicles) is untouched – the drug acts after release ✓.
- Effect builds as clearance, not packing, is inhibited.