NCEA Mechanics Level 3 Exam trends

General topic	2018	2017	2016	2015	2014
Force due to gravity (2 objects)	✓	✓	✓	✓	✓
Orbital velocity	✓		✓		
Centre of Mass (equation not given!)	✓	✓			
Linear Momentum	✓	✓		✓	✓
Free body diagrams			✓		
Rotational motion – vertical circles			✓		
Rotational motion – horizontal circles					✓
Combining F_g and F_c		✓		✓	✓
Using $\Theta = 2\pi$		✓	✓		
Explaining α – angular acceleration	✓				
Conservation of angular momentum		✓		✓	✓
Conservation of Energy		✓	✓		
Rotational Inertia	✓	✓	✓	✓	✓
Explaining restoring force – SHM	✓	✓	✓	✓	
Reference circles and phasors	✓	✓			
SHM – v vs t graph		✓			
SHM – Damped curve graph			✓		
Resonance			✓		