Question Number	Answer		Mark
11(a)(i)	The (gravitational) force per unit mass (exerted on an object) **Or** the (gravitational) force per kg (exerted on an object) (allow weight for gravitational force)	**(1)**	**1**
11(a)(ii)	A point at/through which (all) the weight of an object can be assumed to act **Or** the point at which (all) the weight is centred upon **Or** the point that can be used to represent the (whole) weight (Allow gravitational force for weight)	**(1)**	**1**
11(b)	In free-fall, resultant force = mg (assuming there is no air resistance) $mg = ma$ with cancellation of mass leading to $a = g$ **Or** Resultant force on 1 kg = 1 kg × 9.81 N kg^{-1} = 9.81 N 9.81 N = 1 kg × a so a = 9.81 m s^{-2}	**(1)** **(1)** **(1)** **(1)**	**2**
	Total for question 11		**4**

Question Number	Answer		Mark
12	**Max 4 from any 2 correct pairs** Reason: Reaction time for stop watch **Or** no reaction time for electronic timing system Explanation: Reaction time is large compared to the time to be measured Reason: resolution (of the timer) is smaller Explanation: smaller <u>percentage/%</u> uncertainty (in t). Reason: timer started after ball released **Or** ball released with a force Explanation: Initial velocity not zero **Or** measured time would be lower MP3, allow precision for resolution. MP2 and MP4 must be comparative.	**(1)** **(1)** **(1)** **(1)** **(1)** **(1)**	**4**
	Total for question 12		**4**