1) D
2) B
3) D
4) B
5)

(a) use of $h = ut + \frac{1}{2}at^2$ and $u = 0$ (accept $h = \frac{1}{2}at^2$) B1

gradient of graph = $\frac{1}{2}g$ B1

gradient = 0.7 / (0.225 – 0.082)
=4.9 ± 01 C1

g = 9.8 m s^{-2} A1 **[4]**

(single point solution or gradient = g, max 2/4)

(b) e.g. measurement of h OR t M1

repeat measurement and average A1 **[2]**

6)

(a) **(i)** acceleration (allow a definition of acceleration) B1

(ii) the velocity is decreasing or force/acceleration is in negative direction – accept 'body is decelerating'/'slowing down' ..... B1 [2]

(b) **(i)** e.g. separation of dots becomes constant/does not continue to increase (must make a reference to the diagram) B1

(ii)1 distance = 132 cm B1

(ii)2 at constant speed, distance travelled in 0.1 s = 25 cm (allow ± 1 cm) C1
distance = 132 + (4 x 25)
= 232 cm ..... A1 [4]

(c) $s = ut + ½at^2$
1.6 = ½ x 9.8 x t^2 (allow g = 10 m s^{-2} C1
t = 0.57 s C1
hence 6 photographs ('bald' answer scores 2 marks only) ..... A1 [3]