



Mark scheme for Support Worksheet – Topic 8, Worksheet 1

- 1 $15 = 8 + 4 + 2 + 1 = 2^3 + 2^2 + 2^1 + 2^0$ and so $15_2 = 1111$ [1]
- 2 $0101 = 0 \times 2^3 + 1 \times 2^2 + 0 \times 2^1 + 1 \times 2^0 = 4 + 1 = 5$ [1]
- 3 An analogue signal varies between two extreme values whereas a digital signal can only take one of two values. [1]
- 4 The ratio of the length of the image on the CCD to the length of the object. [1]
- 5 The ratio of electrons emitted to photons incident on the CCD. [1]
- 6 The distance between the two points on the CCD must be more than two pixel lengths. [1]
- 7 They will last longer; they can be manipulated/edited/sent. [2]