AQA AS/A-level Year 1 Biology exam practice answers

2 Cells

**1 (a)** It has completely gone.

 **(b)** 70.6% of 150 cm3 is a shrinkage of 105.9 cm3, so its volume after chemotherapy alone is 44.1 cm3.

 **(c)** Any two from: sometimes, treatment of heat and chemotherapy combined is 100% effective; heat and chemotherapy combined is more effective than chemotherapy alone; all tumours show some shrinkage with all treatments.

 **(d)** Any three from: heat and chemotherapy is the most effective treatment; but this is a small study — only nine cases; there is no timescale on the study; there is no information about side effects, survival rates or tumour recurrence.

**2** Any two from: different sequences of amino acids; produce differently shaped variable or antigen-binding regions; which can combine with different antigens.

**3** Antigens allows cell recognition; so the phagocyte can tell self from non-self/the phagocyte attacks only pathogens/not host cells.

**4 (a)** More at risk of serious symptoms/death.

 **(b)** Any two from: the virus mutates; it produces new proteins/antigens; existing antibodies will be no use.

**5** Vaccines stimulate the immune response; this creates memory cells; so that when the body encounters the actual disease the body initiates the secondary immune response.

**6** They are very specific and sensitive; so they can detect minute quantities of a substance.

**7** Any one from: fear of side effects; religious objections; faith that herd immunity will be effective.