**1.** D

**[1]**

**2.** B

**[1]**

**3.** (a) *Must have both for* ***[1]****.* antigen is a substance / molecule that causes antibody formation;

antibody is a (globular) protein / molecule that recognizes an antigen; 1

(b) antigen causes an immune response to produce antibodies specific for that antigen;

 antibodies produced in B-lymphocytes;

 B-lymphocytes produced in bone marrow;

 carried in blood;

 antigen presenting cell / helper T cell present antigen to B cell; 3 max

(c) *Must name two for* ***[1]****.*CO2; O2; hormones; named nutrient; urea / excess ions; platelets; bicarbonate; 1 max

**[5]**

**4.**

 *cause:*human immunodeficiency virus / HIV;

retrovirus / RNA to DNA;

 enters T-helper cells; immune system becomes disabled / weakened;

 greater chance for opportunistic infections;

 *transmission:*sexually transmitted;

can be transmitted from man to woman / man to man contact / woman to man /  mother to fetus;

 breast milk / saliva and other body fluids;

 use of dirty needles;

 blood transfusions;

**[8]**