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| **A-level Biology – Year 11 transition work** **Disease and immunity** **Quick questions**1. Pathogen; (1)
2. Phagocyte; (1)
3. Proteins/molecules; found on the outside of pathogens; (2)
4. B-cells; (1)
5. To communicate between phagocytes and B-cells / to activate B-cells; (1)
6. Antigens from the pathogen / dead/inactive pathogens; (1)
7. Antibodies; (1)

**Total 8 marks****Examination questions****Q1.**(a)                         *QWC*1.      (Phagocyte engulfs) to form vacuole / vesicle / phagosome;*Accept surrounds bacteria with membrane*2.      Lysosome empties contents into vacuole / vesicle / phagosome;*Accept joins / fuses*3.      (Releasing) enzymes that digest / hydrolyse bacteria;*Ignore breakdown / destroy / lytic enzymes***3**(b)     Two suitable structures;;Examples,1.      Cell wall;2.      Capsule / slime layer;3.      Circular DNA;*Reject “circular chromosome”*4.      Naked DNA / DNA without histones;5.      Flagellum;6.      Plasmid;7.      Pilus;8.      70s / smaller ribosomes;9.      Mesosome;**2 max****[5]****Q2.**(a)     1.      Foreign protein;*Accept glycoprotein / glycolipid / polysaccharide*2.      (that) stimulates an immune response / production of antibody;**2**(b)     1.      A protein / immunoglobulin specific to an antigen;2.      Produced by B cells**OR**Secreted by plasma cells;**2**(c)     1750(%);**1**(d)     1.      Sample 1 / before vaccination no antibody released because patients not yet encountered vaccine / antigen / virus;*Accept ‘produced’ for ‘released’*2.      (Sample 2 / primary response / after first dose) activation / clonal selection / expansion of B cells into plasma cells;3.      Plasma cells release antibodies;4.      (Sample 3 / secondary response / after second dose) memory cells produce more antibodies / produce antibodies more quickly;**4****[9]****Q3.**(a)     1.      Vaccine contains antigen from pathogen;2.      Macrophage presents antigen on its surface;3.      T cell with complementary receptor protein binds to antigen;4.      T cell stimulates B cell;5.      (With) complementary antibody on its surface;6.      B cell secretes large amounts of antibody;7.      B cell divides to form clone all secreting / producing same antibody.**5 max**(b)     1.      Active involves memory cells, passive does not;2.      Active involves production of antibody by plasma cells / memory cells;3.      Passive involves antibody introduced into body from outside / named source;4.      Active long term, because antibody produced in response to antigen;5.      Passive short term, because antibody (given) is broken down;6.      Active (can) take time to develop / work, passive fast acting.**5 max****[10]** |