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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]** |