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| **A-level Biology – Year 11 transition work**  **Variation, evolution and classification**  **Quick questions**   1. The gradual change in the characteristics; of a population from one generation to the next / over time; 2. Natural selection; 3. Different forms/versions; of a particular gene; 4. A characteristic / feature that gives the possessor a greater chance of survival; 5. Where large groups are divided into smaller and smaller (non-overlapping) groups; 6. A group of similar organisms; that can reproduce to give fertile offspring; 7. DNA (similarities/difference in base sequence); proteins (comparing amino acid sequence); early development – embryo development;   **Total 12 marks**  **Examination questions**  **Q1.**  (a)     (i)      (Grouped according to) evolutionary  links/history/relationships / common ancestry;  *Ignore: closely related, factors, characteristics*  *Ignore: genetically similar*  **1**  (ii)     1.       Able to reproduce;  *Accept: smallest taxonomic group/groups of organisms with same genes/ chromosomes/same number of chromosomes*  *Accept: breed for ‘reproduce’*  *Ignore: mate*  *Reject: genetically identical*  *Ignore: similar genes/chromosomes*  2.       To produce fertile offspring;  *Ignore: that are ‘viable’*  **2**  (b)     Phylum  Class  Family  Genus;  *Accept: pleural answers phyla / genera / families*  *Accept phonetic answers phyllem/phylem/fylum/fyla/phylae/phyli/jenus/ jenera/familys*  *All 4 in correct order for 1 mark*  **1**  (c)     1.       Two circles/with two inner circles with no overlap;    *= 2 marks*  *OR*    *= 2 marks*  *OR*    *= 1 mark*  *OR*    *= 1 mark*  2.       Labels correct;  *Ignore underlining / capitals*  *Accept: P tigris/ N nebulosa*  *Accept phonetic spelling*  **2**  (d)     1.      South China and Sumatran tigers share a more recent common ancestor;  *Accept: more closely related (statement must be comparative)*  *Accept: a labelled hierarchy*  2.       (because) identical/same/matching (nucleotide) sequences;  *Accept: converse for Siberian tiger eg Siberian is less closely related to South China AND Sumatran tigers*    **2**  **[8]**  **Q2.**  (a)     (i)      1.      Groups within groups;  *Accept: idea of larger groups at the top* ***or*** *smaller groups at the bottom*  2.      No overlap (between groups);  **2**  (ii)     **3**;  **1**  (iii)    Chordata;  *Accept: if phonetically correct eg ‘Cordata’*  **1**  (b)          1.      (Zedonk has) 47 / odd / uneven number of chromosomes;  *Accept: diploid number would be odd*  *Reject: if wrong number of chromosomes is given*  2.      Chromosomes cannot pair / are not homologous / chromosome number cannot be halved / meiosis cannot occur / sex cells / haploid cells are not produced;  *Accept: cannot have half a chromosome*  ***Q*** *Reject: meiosis cannot occur* ***in*** *sex cells*  **2**  **[6]**  **Q3.**  (a)     (i)      Phylum, Class, Order, Genus;           Mantophasma (M) / (Mantophasma) zephyra;  **2**  (ii)     Groups within (larger) groups;           No overlap;  **2**  (b)     Comparison of / look for similar features / structures / appearance;  **1**  **[5]** |