1  (a) (voluntary)
   ref. to going into room;
   ref. to switching on light;
   ref. to grabbing door handle;

   (involuntary)
   pupils changed size;
   heart beat speeded up;
   ref. to sneezing;  

(b)  (i) muscle;
     gland;  

   (ii) motor / efferent (neurone);  

(c)  (i) phototropism; (ignore refs. to positive or negative)  

   (ii) paint auxin on one side of shoot (or description of other suitable treatment);
     place shoot in a dark place AW;
     leave + for stated period of time (e.g. 1 to 3 days) / until the shoot
     to grows vertically / changes direction AW;
     ref. to control without auxin;
     ref. to repeats used;  

   (iii) auxin accumulates on or moves to + shaded side of shoot / auxin is broken down by light;
     difference in concentrations on shaded side and light side;
     cells with higher concentration of auxin absorb more water;
     causes unequal growth; 

(d)  i. ref. to large concentrations used;
   ii. plants / leaves / stems + are stimulated to grow rapidly;
   iii. growth gets out of control;
   iv. root growth inhibited by high concentrations of auxin;
   v. so plants die; (linked to ii, iii or iv);
   vi. ref. to only broad leaved plants affected AW;  

[max. 4]
[2]
[1]
[1]
[max. 4]
[max. 3]
[max. 2]
[max. 17]
2 (a) (i) maintaining cell turgidity; preventing wilting; transport of named materials (minerals / amino acids / sugars); medium for enzyme action; raw material for photosynthesis;  

(iii) salt concentration in soil is higher than in roots AW; ref. to water potential is greater in root cells than in soil / w.p gradient goes from cells to soil AW; so water is drawn out of roots + by osmosis; cells become flaccid; plant wilts; plant lacks water;  

(b) (i) active transport;  

(ii) growth would be slower; because some of the plant’s energy would be used in active transport;  

(iii) (ACCEPT OTHER NUTRIENTS AND FUNCTIONS) magnesium; ref. to the formation of chlorophyll; nitrate; ref. to growth / formation of amino acids or protein;  

(c) the removal of a gene from one species; and its insertion into another species; (in article) genes are modified, not transferred AW; ☐ other valid arguments  

(d) ref. to leaching of minerals AW; ref. to eutrophication + of rivers / lakes; ref. to soil erosion; creation of water shortage; ref. to soil + becomes infertile / lacks minerals;