Mechanical Systems and Control(Revision)

simple mechanisms.

a What simple mechanism did the designer of this pruning scissors make use of to design the effective garden tool illustrated in A?





b Use a full sentence to explain why you will be able to cut thicker branches with the pruning scissors than with a normal pair of scissors as shown in B. Make use of the words 'mechanical advantage' and 'effort' in your sentence.

LIVEWORKSHEETS

c Systems diagrams are used to analyse and describe the way the different parts of a system work. Match each of the three descriptions, i-iii, to the most suitable block in the systems diagram. Write only the number i, ii or iii next to the word INPUT, PROCESS or OUTPUT on your answer sheet.

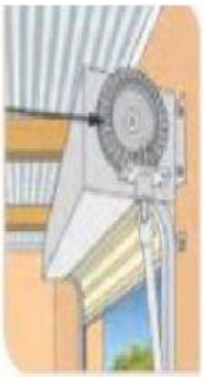
i Load where the cutting has to take place

ii Force on handles as far back as possible

iii Fulcrum in the middle where the two levers pivot

Systems diagram for the pruning scissors





2 Study the illustration of the gear system of a motor gate and complete the sentence by filling in the missing words.

Gears can be used to make work _____ (a) like in this motor gate. This gear system delivers an output force that will be four times bigger than the input force. The small input gear will thus be _____ (b) times smaller than the driven gear, and mechanical advantage can be described as _____ (c)

LIVEWORKSHEETS