INSTRUCTIONS AND INFORMATION TO CANDIDATES

• Write your Candidate Number and Name in the spaces on the A3-answer sheets. (See example on the answer sheets.)
• Shade your Candidate Number in the ovals under you Candidate Number. (See example on the answer sheets.)
• Use HB pencil for diagrams, graphs or rough working.
• Do not use correction fluid.
• Answer only ONE question.
• Answer the questions on the prepared A3-answer sheets provided.
• Answer the questions ONLY in the spaces prepared for each question.
• Make sure that your writing and drawings are neat and clearly visible.
• At the end of the examination fasten your A3 work together before handing it in.
• Do not fold your paper.
• The number of marks is given in brackets [ ] at the end of each question or part question.
Keys are part of everybody’s life. For security reasons, buildings and cars must be locked.

The following questions are often asked:

- Have you ever lost or damaged your car keys?
- Did you suffer inconvenience due to broken or lost keys?
- Do you want to have a spare key, just in case you lose your present one?

Luckily the following solutions are available:

- There are key cutting shops.
- Car keys can be duplicated and replaced by car companies.
- Key holders can be bought to hang keys on.
- Keys can be designed in such a way that it signals a sound/light when you look for it.
• Answer only one question on the separate A3-answer sheet provided.
• Answer the questions only in the spaces prepared for each question.

1 Design Communication

Design an advertisement poster for a shop that sells keys and key holders, as well as cut keys. You may give it any name you want.

(a) (i) State one additional important specification for the poster. [1]
(ii) Give one reason why the specification in (a) (i) is important. [2]

(b) (i) Use sketches and notes to propose two ideas of possible designs for your poster. [6]
(ii) Select one of the ideas to be developed into a final design. Give a reason for your choice. [2]

(c) Using a suitable method, draw a presentation of your final design. Your drawing should show the major design detail, clear graphics and the main dimensions. [12]

(d) Use a flow chart to show three procedures required to make the poster. [4]

(e) Describe a test to determine if the completed poster satisfies the specification stated in (a) (i). [3]

[30]

2 Resistant Materials

Design a key holding device to keep at least 5 bunches of keys within reach when needed.

(a) (i) State one additional important specification for such a device. [1]
(ii) Give one reason why the specification in (a) (i) is important. [2]

(b) (i) Use sketches and notes to propose two ideas of such a device. Describe how each of the devices operates. Use sketches and notes to aid the description. [6]
(ii) Select one idea from (b) (i) for your final design. Give a reason for your choice. [2]

(c) Using a suitable method, draw a presentation of your final design. Your drawing should show the major design detail and the main dimensions. [12]

(d) Use a flow chart to show three procedures required to manufacture the device. [4]

(e) Describe a test to determine if the completed design satisfies the specification stated in (a) (i). [3]

[30]
3 Technology

Design a simple circuit for a key that will alert you with sound or a light when you are looking for it.

(a) (i) State one additional specification for such a circuit. [1]
(ii) Give one reason why the specification in (a) (i) is important. [2]

(b) (i) Suggest two ideas for such a circuit. Describe how each of the circuits operates. Use sketches and notes to aid the description. [6]
(ii) Select one circuit from (b) (i) that could be installed.

Give a reason for your choice. [2]

(c) Using a suitable method, draw a presentation of your final design. Show all important detail. [12]

(d) Use a flow chart to show three procedures required to construct the circuit. [4]

(e) Describe a test to determine if the completed design satisfies the specification stated in (a) (i). [3]