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**DESIGN AND TECHNOLOGY**

**0445/12**

Paper 1 Product Design

**October/November 2019**

**1 hour 15 minutes**

Candidates answer on the pre-printed A3 Answer Sheets.

Additional Materials: Standard drawing equipment and coloured pencils.

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**READ THESE INSTRUCTIONS FIRST**

Write your centre number, candidate number and name in the spaces on **both** printed Answer Sheets.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

**DO NOT WRITE IN ANY BARCODES.**

Answer **one** question.

Write/draw your answers in the spaces provided on the Answer Sheets.

You may use a calculator.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [ ] at the end of each question or part question.

The total of the marks for this paper is 50.

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This document consists of **4** printed A4 pages and **2** A3 Inserts.

Answer **ONE** question only on the A3 pre-printed answer sheets provided.

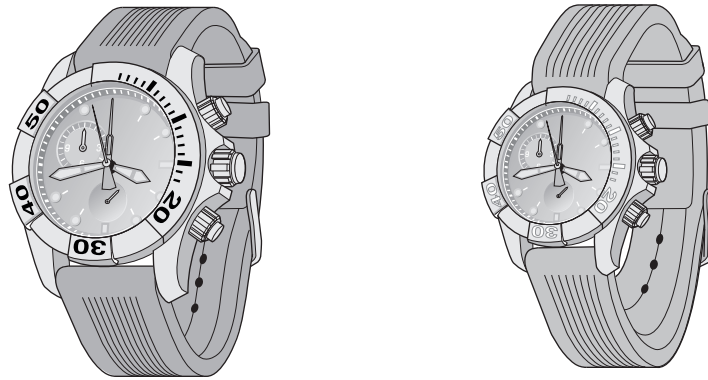
- 1 Some people collect watches.



Design a unit to store and display eight wrist watches.

- (a) List **four** additional points about the function of such a unit that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods that could be used to protect the items when on display. [4]
- (c) Develop and sketch **three** ideas for the unit. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

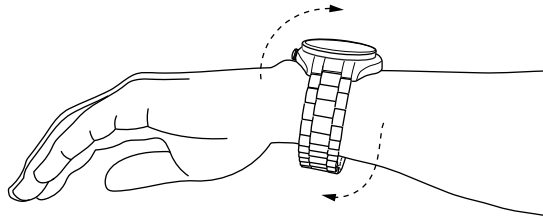
2 A jewellery shop wishes to display a new range of water resistant watches.



Design a counter top display which will demonstrate and promote the ability of a watch to resist water.

- (a) List **four** additional points about the function of such a counter top display that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods that can be used to make card water resistant. [4]
- (c) Develop and sketch **three** ideas for the counter top display. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

- 3 Some watches are powered by the movement of the user's wrist.



Design a device that will provide movement to power the watch when it is not being worn on a wrist.

- (a) List **four** additional points about the function of such a device that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods which could be used to create movement in the device. [4]
- (c) Develop and sketch **three** ideas for the device. [12]
- (d) Evaluate your ideas and justify why you have chosen **one** idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

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