

DESIGN AND TECHNOLOGY

Paper 1 Product Design

0445/12 May/June 2016 1 hour 15 minutes

Candidates answer on the pre-printed A3 Answer Sheets.

Additional Materials: Standard drawing equipment and coloured pencils.

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.

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



Answer one question only on the pre-printed A3 Answer Sheets provided.

1 Young babies have to learn to walk.



Design a device that will help to support a baby while learning to walk.

- (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 different methods that could be used to attach wheels to a frame. [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]

https://xtremepape.rs/

2 Products need to be packaged for point of sale displays.



Design a package for **two** dolls. Your design must allow the dolls to be visible within the packaging.

- (a) List four additional points about the function of such a package that you consider to be important. [4]
- (b) Use sketches and notes to show two different methods that could be used to provide a carrying handle for such a package. [4]
- (c) Develop and sketch three ideas for the package. [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 Children enjoy riding on sit-on toys.



Design a sit-on toy that can be propelled and steered by a child.

- (a) List **four** additional points about the function of such a sit-on toy that you consider to be important. [4]
- (b) Use sketches and notes to show two different mechanisms by which a sit-on toy could be propelled. [4]
- (c) Develop and sketch three ideas for the sit-on toy. [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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