



Rewarding Learning

General Certificate of Secondary Education
2014

Centre Number

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Candidate Number

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Technology and Design

Unit 3: Product Design



[GTD31]

TUESDAY 3 JUNE, AFTERNOON

GTD31

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Questions which require drawing or sketching should be completed using an HB pencil. All other questions must be completed in blue or black ink.

Do not write with a gel pen.

Answer **all eight** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 80.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

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20GTD3101



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(Questions continue overleaf)

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20GTD3107

5 (a) A company engaged in the manufacture of gardening equipment is reordering stock. The stock is reordered using the **just-in-time** process.

(i) Give **two** reasons for using the **just-in-time** process.

1. _____

2. _____

[2]

(ii) The company uses standardised components.

Outline **two** features of this industrial practice.

1. _____
2. _____

[2]

(b) Fig. 2 shows a sketch of a wheelbarrow manufactured by the company.

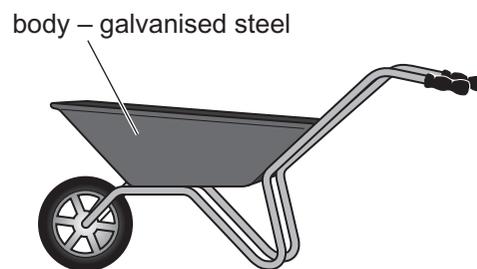


Fig. 2

(i) Give **one** reason why the body is galvanised.

[1]

| Examiner Only | |
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| Marks | Remark |
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- 6 An outline diagram of a manufactured component is shown in Fig. 3. The diagram also shows **two** key dimensions and their tolerance.

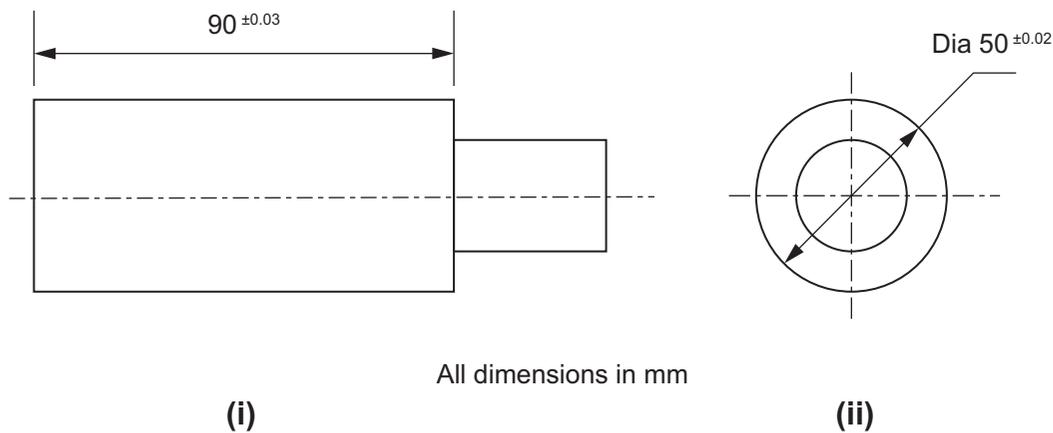


Fig. 3

- (a) Calculate the maximum and minimum acceptable values for each of the given dimensions.

(i) Maximum _____ Minimum _____ [1]

(ii) Maximum _____ Minimum _____ [1]

- (b) During sample testing of the components it was found that 10% were outside the tolerance.

(i) Explain what is meant by sample testing.

_____ [2]

| Examiner Only | |
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| Marks | Remark |
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8 Using an annotated sketch or sketches, design an adjustable desk lamp suitable for a bedside table or unit. The lamp is to be made from materials generally available in a school workshop. The design must satisfy the following:

- The height or angle of the lamp should be easily adjustable. [4]
- Material(s) selection, justification and the economy of material(s) used. [4]
- It must have an on/off switch and its own 9 volt battery supply which must be accessible to replace the battery. Details of circuit/electronic systems are not asked for. [4]
- Must be stable to sit on a bedside table or unit. [4]
- Must be an aesthetically pleasing and functional design. [4]
- Good quality annotated sketches should be used. A minimum of three overall dimensions should be included. [4]

Use the next page for your answer. If you need more space there is an additional page overleaf.

| Examiner Only | |
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| Marks | Remark |
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| Total Question 8 | |
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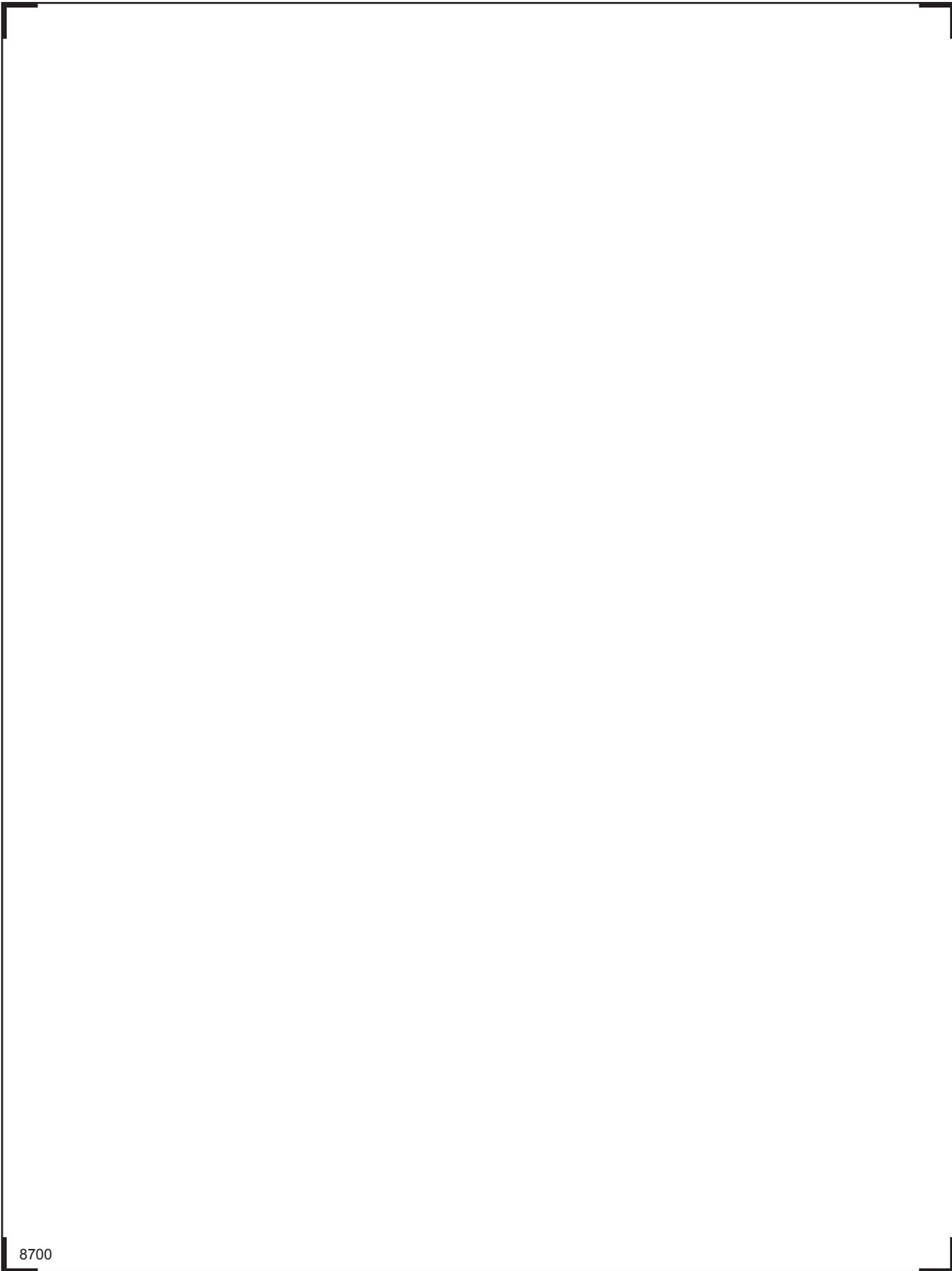


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20GTD3115



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20GTD3116





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20GTD3118





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20GTD3119



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| For Examiner's use only | |
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| Question Number | Marks |
| 1 | |
| 2 | |
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Examiner Number

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