Candidate Number	Candidate Name

JUNIOR SECONDARY CERTIFICATE

DESIGN AND TECHNOLOGY 1808/2

PAPER 2 45 minutes

Marks 30 **2018**

Additional materials A3 drawing paper
Standard drawing equipment

INSTRUCTIONS AND INFORMATION TO CANDIDATES

- Write your Candidate Number and Name in the spaces at the top of this page and on all separate answer paper used.
- Use a pencil for diagrams, graphs or rough working.
- Do not use correction fluid.
- Answer **one** question on the separate A3 drawing paper.
- At the end of the examination, fasten your A3 work together before handing it in.
- The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **4** printed pages.

Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

[Turn over

Answer **one** question on the separate A3 drawing paper provided.

1 Design Communication

Paul received a metal toy truck as a gift from his father. In order to enhance the appearance of the truck, a wind scoop could be fitted on the roof of the cabin of the truck.

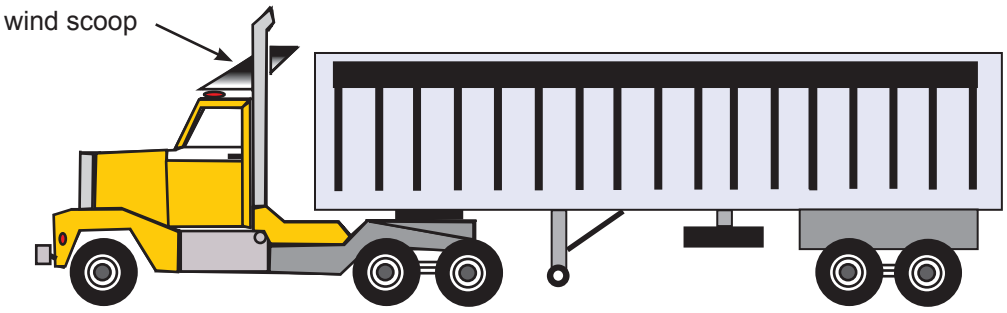

Fig. 1

Produce a template on a piece of card for such a scoop. The roof of the truck cabin is approximately 100 mm x 100 mm.

(a) (i) State **one** other important specification for the scoop. [1]

(ii) Give a reason why the specification in **(a) (i)** is important. [2]

(b) (i) Use sketches and notes to propose **two** ideas of possible designs for the scoop. [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 the final design. The drawing should show the major design detail, the edge pattern and the main dimensions. [12]

(d) Use a flow chart to show **three** procedures required to make the scoop from a piece of card. [5]

(e) Describe a test to determine if the scoop satisfies the specification stated in **(a) (i)**. [2]

[30]

2 Resistant Materials

An extra trailer could make the truck more appealing to Paul.

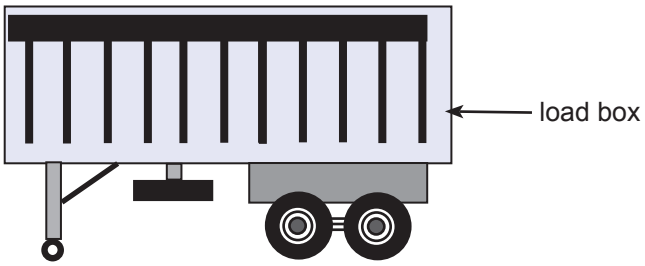

Fig. 2

You are required to produce a load box for the extra trailer.

The load box should be

- easy to make
- safe

(a) (i) State **one** other important specification for the load box. [1]

(ii) Give **one** reason why the specification in **(a) (i)** is important. [2]

(b) (i) Use sketches and notes to propose **two** ideas for a load box. [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 detail and dimensions. [13]

(d) (i) List **one** suitable material for your design. [1]

(ii) Describe why the material in **(d) (i)** is suitable for your design . [2]

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

[30]

3 Technology

A further enhancement that could be added, is a simple headlight and tail light system.

Fig. 3

The system should

- operate on 6 Volts
- be switched on and off

(a) (i) State **one** additional specification for such a system. [1]

(ii) Give a reason why the specification in **(a) (i)** is important. [2]

(b) (i) Suggest **two** types of circuit for the lighting system. [2]

(ii) Describe how each of the systems operate. [6]

(c) Select **one** system from **(b) (i)** that could be installed. Give a reason for your choice. [3]

(d) Using a suitable method, draw a circuit diagram for your system. Use the appropriate symbols on your circuit diagram. [12]

(e) List a selection of tools needed to install the system. [2]

(f) Describe a test to determine if the system satisfies the specification in **(a) (i)**. [2]

[30]