

2506/105

2507/105

WORKSHOP TECHNOLOGY AND

LIFE SKILLS

June/July 2017

Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AERONAUTICAL ENGINEERING
(AIRFRAMES AND ENGINES OPTION)
(AVIONICS OPTION)

MODULE I

WORKSHOP TECHNOLOGY AND LIFE SKILLS

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Non-programmable scientific calculator;

Answer booklet.

This paper consists of TWO sections, A and B.

Answer question ONE and any other TWO questions from section A.

Answer any TWO questions from section B.

All questions carry equal marks.

Maximum marks for each part of a question are as shown.

All dimensions are in millimetres.

Candidates should answer the questions in English.

This paper consists of 4 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A: WORKSHOP TECHNOLOGY (60 marks)

Answer question ONE and TWO other questions from this section.

1. (a) State **five** safety precautions observed when carrying out sheet metal work. (5 marks)
- (b) Outline **five** reasons for heat treating air craft hardware. (5 marks)
- (c) Using sketches, highlight the procedure of marking out the sheet metal labelled figure 1. (10 marks)

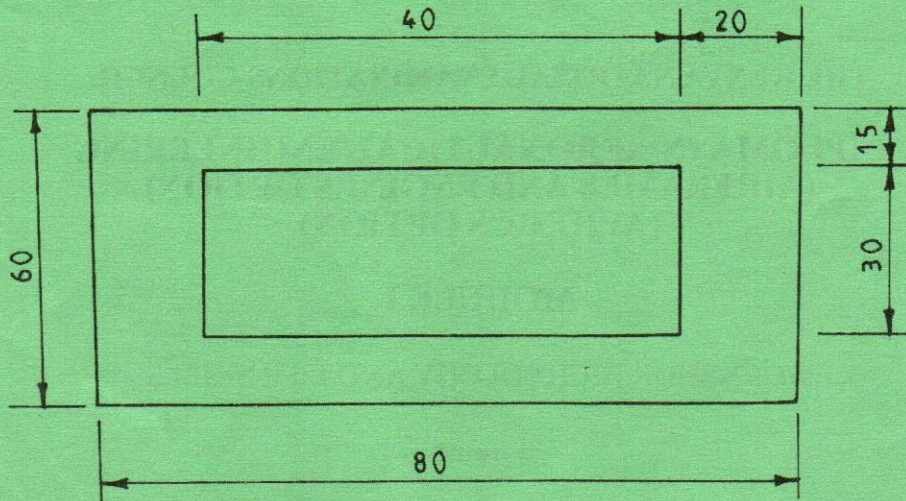


Fig. 1

2. (a) Highlight **six** objectives of conducting plant maintenance. (6 marks)
- (b) State **six** functions of a cutting fluid. (6 marks)
- (c) Illustrate the following gas welding joints:
- (i) butt;
 - (ii) lap;
 - (iii) open corner;
 - (iv) fillet.
- (8 marks)

3. (a) With the aid of a sketch describe the working principle of a shaping machine. (10 marks)
- (b) List **five** types of metals used in sheet metal work. (5 marks)
- (c) State **five** non-mechanical causes of accidents in a workshop. (5 marks)

4. (a) Describe each of the following corrosion prevention methods:
- (i) cladding;
 - (ii) electrolytic treatment;
 - (iii) protective coating.
- (9 marks)
- (b) State **two** advantages of non-destructive testing and **two** disadvantages of destructive testing. (4 marks)
- (c) Outline the procedure of extinguishing the gas welding torch. (7 marks)
5. (a) Define each of the following terms as used in quality controls:
- (i) accuracy;
 - (ii) precision;
 - (iii) repeatability;
 - (iv) standards;
 - (v) traceability.
- (10 marks)
- (b) Explain **five** factors affecting the lathe tool life. (10 marks)

SECTION B: LIFE SKILLS (40 marks)

Answer TWO questions from this section.

6. (a) State the **three** categories of life skills giving **two** examples in each case. (6 marks)
- (b) Explain **two** communication techniques that may demonstrate empathy. (4 marks)
- (c) Explain **five** work-related factors that may lead to stress in an individual. (10 marks)
7. (a) Explain the meaning of each of the following phrases as used in life skills:
- (i) emotional intelligence;
 - (ii) gender stereotypes;
 - (iii) leisure time.
- (6 marks)
- (b) Outline **six** measures that the government may take to eliminate child labour. (6 marks)
- (c) Explain **four** factors that may enhance negotiation between two persons. (8 marks)

8.

- (a) Providing care and support to HIV infected persons enables them to live long, healthy lives. Explain **four** ways through which this care and support may be demonstrated. (8 marks)
- (b) Explain the **four** general principles outlined by the convention on the Rights of the child. (8 marks)
- (c) Outline **four** reasons that may account for conflicts within an organisation. (4 marks)

*Being treated as equals - training, clearing, caring
 • involving them
 • involving them
 • by involving in decision making*

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