

2506/105  
2507/105  
WORKSHOP TECHNOLOGY AND  
LIFE SKILLS  
Oct./Nov. 2019  
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:*

*Answer booklet;*

*Mathematical tables/Non-programmable scientific calculator.*

*This paper consists of EIGHT questions in TWO sections; A and B.*

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

*Answer TWO questions from section B.*

*All questions carry equal marks.*

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

*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

*Answer question ONE any other TWO questions from this section.*

1. (a) Outline **five** objectives of industrial safety. (5 marks)
- (b) With the aid of a sketch, describe austempering as used in heat treatment of aircraft hardware. (10 marks)
- (c) Highlight the procedure of carrying out quality control. (5 marks)
2. (a) With the aid of sketches, describe each of the following sheet metal operations:
  - (i) punching;
  - (ii) blanking. (10 marks)
- (b) Highlight the procedure of marking out lines on a 6 mm rectangular metal work piece. (6 marks)
- (c) Outline **four** advantages of forging as used in metal work. (4 marks)
3. (a) With the aid of a sketch, describe the leftward welding technique. (10 marks)
- (b) Outline **four** reasons for carrying out finishing operations on machined surfaces. (4 marks)
- (c) List **three** types of waste in an industry. (3 marks)
- (d) Outline **three** forms of metal supply. (3 marks)
4. (a) With the aid of sketches, describe each of the following aircraft fasteners:
  - (i) locking plate;
  - (ii) tab washer. (10 marks)
- (b) Explain each of the following terms as used in grinding wheels:
  - (i) abrasives;
  - (ii) grade;
  - (iii) structure. (6 marks)

- (c) Outline **two** differences between Tungsten Inert Gas welding (TIG) and Metal Inert Gas (MIG). (4 marks)
5. (a) (i) Describe 'hand smogging' as used in aircraft corrosion control.
- (ii) Outline **two** limitations of short term air craft corrosion control. (5 marks)
- (b) With the aid of a sketch, explain the metal Non-destructive Testing(NDT) using the magnetic dust method. (10 marks)
- (c) Highlight **five** objectives of aircraft maintenance. (5 marks)

### SECTION B: LIFE SKILLS

*Answer any TWO questions from this section.*

6. (a) Outline **four** ways in which a person may demonstrate assertive behaviour. (4 marks)
- (b) Differentiate empathy from sympathy. (4 marks)
- (c) Outline **four** measures that a parent may take to enhance the self esteem of a child. (4 marks)
- (d) (i) Outline **four** factors that may contribute to child labour in a community.
- (ii) Highlight **four** strategies that the government may adopt to minimize child labour. (8 marks)
7. (a) (i) Explain the term 'eustress'.
- (ii) Highlight **six** behavioural symptoms that a stressed person may exhibit. (8 marks)
- (b) The management of Peva Flights Limited has noticed increased conflicts among the employees of the organisation. Explain **four** reasons that may account for such conflicts. (8 marks)
- (c) Explain **two** ways in which Human Immunodeficiency Virus (HIV) may be transmitted from a mother to a child. (4 marks)

8. (a) (i) Explain the phrase 'emotional intelligence'.  
(ii) Explain **three** values that may be associated with emotional intelligence. (8 marks)
- (b) Explain each of the following terms as used in Life Skills:  
(i) negotiation;  
(i) creative thinking. (4 marks)
- (c) Distinguish between drug misuse and drug abuse. (4 marks)
- (d) Highlight **four** high-risk behaviours that an individual may engage in as a result of depression. (4 marks)

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