

2506/105

2507/105

**WORKSHOP TECHNOLOGY AND**

**LIFE SKILLS**

**June/July 2018**

**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 1 (COMPULSORY) and 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 indicated.*

*Candidates should answer the questions in English.*

**This paper consists of 3 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 1 (COMPULSORY) and other TWO questions from this section.

1. (a) Define aircraft corrosion. (2 marks)
- (b) Highlight **six** reasons for maintaining cutting tools. (6 marks)
- (c) Describe each of the following heat treatment processes: (12 marks)
- (i) case hardening;
  - (ii) annealing;
  - (iii) tempering;
  - (iv) nitriding.
2. (a) With the aid of a sketch, explain each of the following terms as used in limits and fits: (10 marks)
- (i) nominal size;
  - (ii) upper limit;
  - (iii) lower limit;
  - (iv) allowance.
- (b) Outline **six** functions of electrode coating. (6 marks)
- (c) List **four** methods of waste material disposal. (4 marks)
3. (a) With the aid of a sketch, describe the arc welding principle. (10 marks)
- (b) Explain each of the following sheet metal operations: (6 marks)
- (i) shearing;
  - (ii) punching;
  - (iii) bending.
- (c) List **four** properties of plastics. (4 marks)
4. (a) With the aid of sketches, describe each of the following aircraft fasteners: (15 marks)
- (i) locknut;
  - (ii) castle nut;
  - (iii) locking plate.

(b) Differentiate between active and passive types of fluxes as used in metal joining, giving an example in each case. (5 marks)

5. (a) Using sketches, describe the procedure of cutting internal threads in a rigid pipe. (12 marks)
- (b) Highlight **five** items found in a first aid kit. (5 marks)
- (c) Outline **three** applications of a vernier caliper. (3 marks)

**SECTION B: LIFE SKILLS (40 marks)**

*Answer TWO questions from this section.*

6. (a) Highlight **five** personal factors that may hinder the attainment of life goals. (5 marks)
- (b) Outline **five** factors that may destroy relationships in a place of work. (5 marks)
- (c) Explain **five** ways in which drugs and substance abuse and Human Immunodeficiency Virus (HIV) are related. (10 marks)
7. (a) Distinguish between immuno-compromised and immuno-deficiency in relation to Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS). (4 marks)
- (b) Explain **three** negative effects of conflicts in an organization. (6 marks)
- (c) Explain **five** reasons that make it necessary for an individual to manage time effectively. (10 marks)
8. (a) Identify **six** feelings that may be experienced by individuals the first time they test positive to Human Immunodeficiency Virus (HIV). (3 marks)
- (b) Illustrate the process of effective decision making. (7 marks)
- (c) Explain **five** health benefits that may be associated with Life Skills Education. (10 marks)

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