2506/105 2507/105 WORKSHOP TECHNOLOGY AND LIFE SKILLS Oct./Nov. 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 THREE questions from section A and 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 THREE questions from this section.

1.	(a)	Explain ways of protecting oneself from each of the following:		
		(i) toxic substances;		
		(ii) noise;		
		(iii) excessive light;		
		(iv) dust and fumes;		
		(v) chemicals.		
			(10 marks)	
	(b)	Outline the applications of each of the following aircraft fasteners:		
		(i) screws;		
		(ii) nuts;		
		(iii) rivets;		
		(iv) taper pins.		
			(8 marks)	
	(c)	Name two engineering materials.	(2 marks)	
2.	(a)	With the aid of a sketch, explain the three types of flames used in oxy-acetylene		
		welding, giving two applications in each case.	(12 marks)	
	+ (b)	Outline five reasons for carrying out quality control.	(5 marks)	
	(c)	List six finishing processes employed in aircraft hardware.	(3 marks)	
3.	(a)	With the aid of sketches, describe each of the following filing te	chniques:	
		(i) straight filing;		
		(ii) draw filing.		
			(10 marks)	
	(b)	Illustrate the following lathe operations:		
		(i) knurling;		
		(ii) taper turning;		
		(iii) boring.		
			(9 marks)	
	(c)	Outline two applications of aircraft hardware.	(1 mark)	

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4. (a) With the aid of labelled sketches, describe each of the following welding techniques: (i) right-ward; (ii) left-ward. (16 marks) (b) Differentiate between destructive and non destructive methods of material testing. (4 marks) 5. (a) With the aid of sketches, describe each of the following sheet metal processes: (i) raising; (ii) wire drawing; (iii) upsetting. (15 marks) (b) Describe cathodic corrosion protection as applied to metallic pipes. (3 marks) (c) Outline four materials used in protective coating. (2 marks) SECTION B: LIFE SKILLS (40 marks) Answer TWO questions from this section. 6. (a) Distinguish between critical thinking and creative thinking. (4 marks) Outline six consequences of poor employer-employee relations. (b) (6 marks) Explain five ways in which child labour may impact negatively on children. (c) (10 marks) 7. Outline six signs and symptoms of Acquired Immune Deficiency Syndrome (AIDS) in (a) adults. (6 marks) Explain five factors that may contribute to low self esteem in a young person. (b) (10 marks) (c) Highlight four measures that the management of an organization may take to manage job-related stress among employees. (4 marks) 8. Outline four reasons that make empathy an important skill in a relationship. (a) Explain five strategies that an individual may adopt to deal with personal limitations. (b) (10 marks) Tim is considered to be a very assertive young man. Outline six attributes that may (c) demonstrate this assertiveness. (6 marks) THIS IS THE LAST PRINTED PAGE. 2506/105 2507/105 Oct./Nov. 2018