

DIPLOMA IN AERONAUTICAL ENGINEERING

(AIRFRAMES AND ENGINES OPTION)

(AVIONICS OPTION)

MODULE I

WORKSHOP TECHNOLOGY AND LIFE SKILLS

3 hours

INSTRUCTIONS TO CANDIDATES

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

Answer any **TWO** questions from section B

All questions carry equal marks

Marks for each part of a question are as indicated

## SECTION A: WORKSHOP TECHNOLOGY

Answer question **1** and any other **TWO** questions from this section.

1. (a) (i) Differentiate between measuring and inspection.  
(ii) State **two** marking out tools and two measuring equipment.(6 marks)
- (b) Draw a well labeled diagram of a micrometer screw gauge (6 marks)
- (c) (i) Outline **four** methods of caring for measuring equipment  
(ii) Explain **two** properties of materials from which measuring equipment are made. (8 marks)
2. (a) With the aid of a diagram, explain the production of cast iron. (10 marks)
- (b) Outline **four** forms of supply for carbon steels (4 marks)
- (c) Explain **three** properties of aluminum that make it useful in aircraft manufacture. (6 marks)
3. (a) (i) Explain the phrase “ culture of maintenance”.  
(ii) Explain **three** benefits of preventive maintenance to an organization (8marks)
- (b) (i) Outline **four** functions of cutting fluids during drilling operation.  
(ii) Highlight **two** safety precautions observed when using lathe machine. (6marks)
- (iii) Explain the working mechanism of a power saw (6 marks)
4. (a) Define the following terms with reference to workshop measurements:  
(i) Limits  
(ii) Tolerance  
(iii) fit (3 marks)
- (b) Explain **three** needs for marking out a workpiece and state any two tools used. (8marks)

(c) (i) Describe the procedure of tapping a blind hole. (9 marks)

5. (a) With regard to the factory's Act, state any **two** safety precautions for each of the following:

(i) machinery;

(ii) first aid;

(4 marks)

(b) (i) Explain the manifestation fretting corrosion;

(ii) As a consulting technician in aircraft maintenance, you have been asked to recommend corrosion prevention methods to a group of trainees. List **four** methods you would recommend. (10 marks)

c. List **six** methods of disposing waste giving an example of the waste material in each method. (6 marks)

#### SECTION B: LIFE SKILLS

Answer any **TWO** questions from this section.

6. (a) (i) Define the term negotiation.

(ii) Explain **two** negotiating techniques.

(iii) State **two** benefits of negotiating. (8 marks)

(b) Explain **two** benefits of high esteem (4 marks)

(c) (i) Differentiate between aggressive and passive behavior.

(ii) Outline **four** benefits of assertiveness in a relationship. (8 marks)

7. (a) (i) Outline **five** steps in the decision-making process.

(ii) Explain **three** consequences of wrong choices (11 marks)

b. (i) Define the term "creative thinking".

- (ii) Describe **three** situations that call for creative thinking in aviation settings.
  - (iv) State **four** benefits of creative thinking. (9 marks)
- 8. (a) (i) As a counselor , you have been appointed to advise a group of aircraft maintenance technicians on leisure activities. Explain **three** leisure activities you would recommend to them
  - (ii) Outline **four** benefits the technicians will acquire by engaging in positive leisure activities. (10 marks)
- b. (i) Define the term “conflict”
- (ii) Describe **four** causes of conflicts in an organization.
- (iii) State **four** consequences of conflicts in an a family. (10 marks)

