ENGINEERING DRAWING 2
5315

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD

Technical and Vocational Education Examination

JUNE XXXX **INTERMEDIATE LEVEL**

Subject Title	**ENGINEERING DRAWING**
Subject Code No.	**5315**
Paper No.	**TWO**

Duration : 2 HOURS

EGINEERING DRAWING PAPER 2

RECOMMENDATIONS

- *No document is authorized;*
- *The work to be done comprises two independent parts:*
  - ***PART I : Technological study*** *(20 MARKS) and*
  - ***PART II : Graphical study*** *(30MARKS)*
- *Make sure you have been distributed 7 sheets numbered from 1 to 7; the answer sheets from 5 to 7 are to be handed to the examiner at the end of the paper ,filled or not.*
- *The candidate will answer* ***4 out of 5*** *questions in Technological study.*
- *All the questions of PART 1 HAVE THE SAME MARKS WHCH IS 5 MKS*
- ***All the candidates*** *shall answer the question in graphical study*
- *This paper is rated at 60% of the entire paper*

This paper aims at evaluating the candidates in the following competences :

- Identifying and interpreting mechanical links
- Identifying and interpreting a guiding in a mechanism
- Representing/Interpreting a complex piece taken from a functional mechanism

THEME :HANDLING CLAW

SET UP

The device shown below in figure 1 is the pictorial representation of a handling claw . It is a mechanism that facilitates the clamping of the piece for handling.

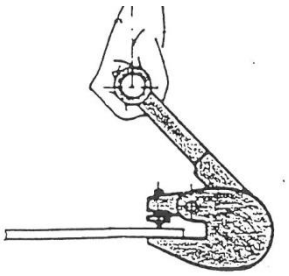


Figure 1 : Pictorial representation of the claw

PART1 : TECHNOLOGICAL STUDY (20 Marks)

QUESTION 1 : Identification of mechanism elements ***(5marks)***

Give the references of pieces or group of pieces corresponding to letters A, B, C and D of the kinematic diagram

5 mks

QUESTION 2 : Links ***(5marks)***

2.a)Define the nature of the movement for piece **3** in respect to piece **1** ***3mk***s

2.b)Deduce the name and the mode of the link between the assemblies **3** and **1** ***2mks***

QUESTION 3 : Fits and Tolerances ***(5 marks)***

The fit between **3** and **6** is Ø 8H7f6 giving for the bore $\emptyset\ 8_{0}^{+15}$ and the shaft $\emptyset\ 8_{-26}^{-13}$

3.a) Calculate the Maximum clearance and the minimum clearance **3 mks**

3.b) Deduce the type of fit. **2 mks**

QUESTION 4 : Designation of fasteners ***(5 marks)***

4.a) Give the standard designation of the piece **2** **3mks**

4.b) Give the function of the threading and knurling on that piece **2mks**

QUESTION 5 : Functional Dimensioning ***(5marks)***

Draw the chain of dimension for the condition $\vec{J}$ ***4 mks***

PART1 : GRAPHICAL STUDY (30 Marks)

On the answer sheet (2/2), in scale 1:1, in pencil and instruments, Complete definition drawing opposite of the claw **1** in three views :

- Front view; ***10mks***
- Top view; ***10mks***
- Left view in section C-C. ***10mks***

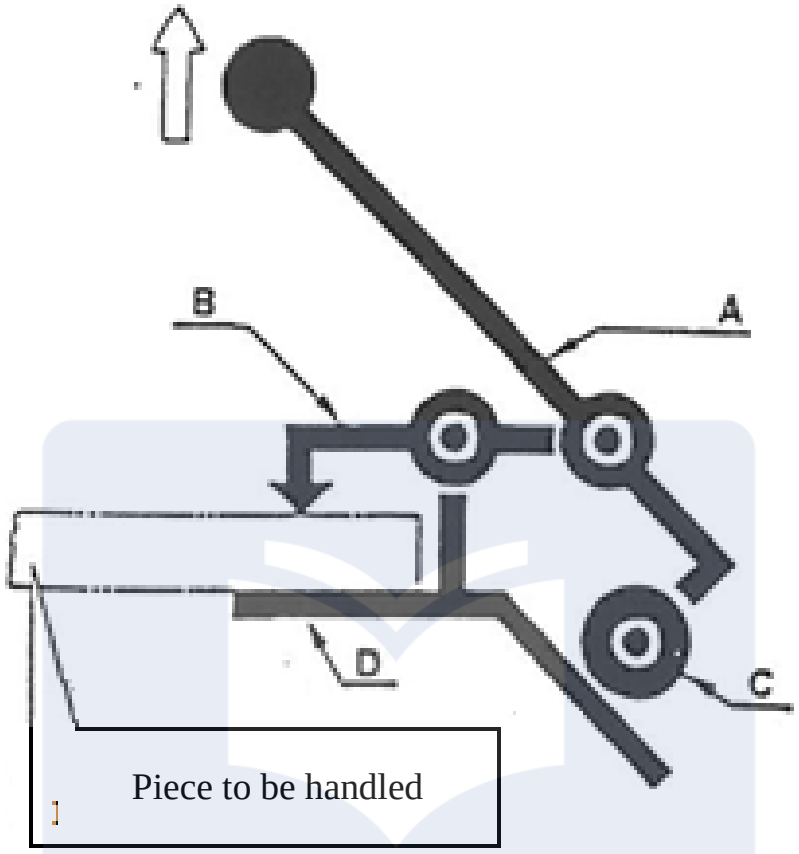
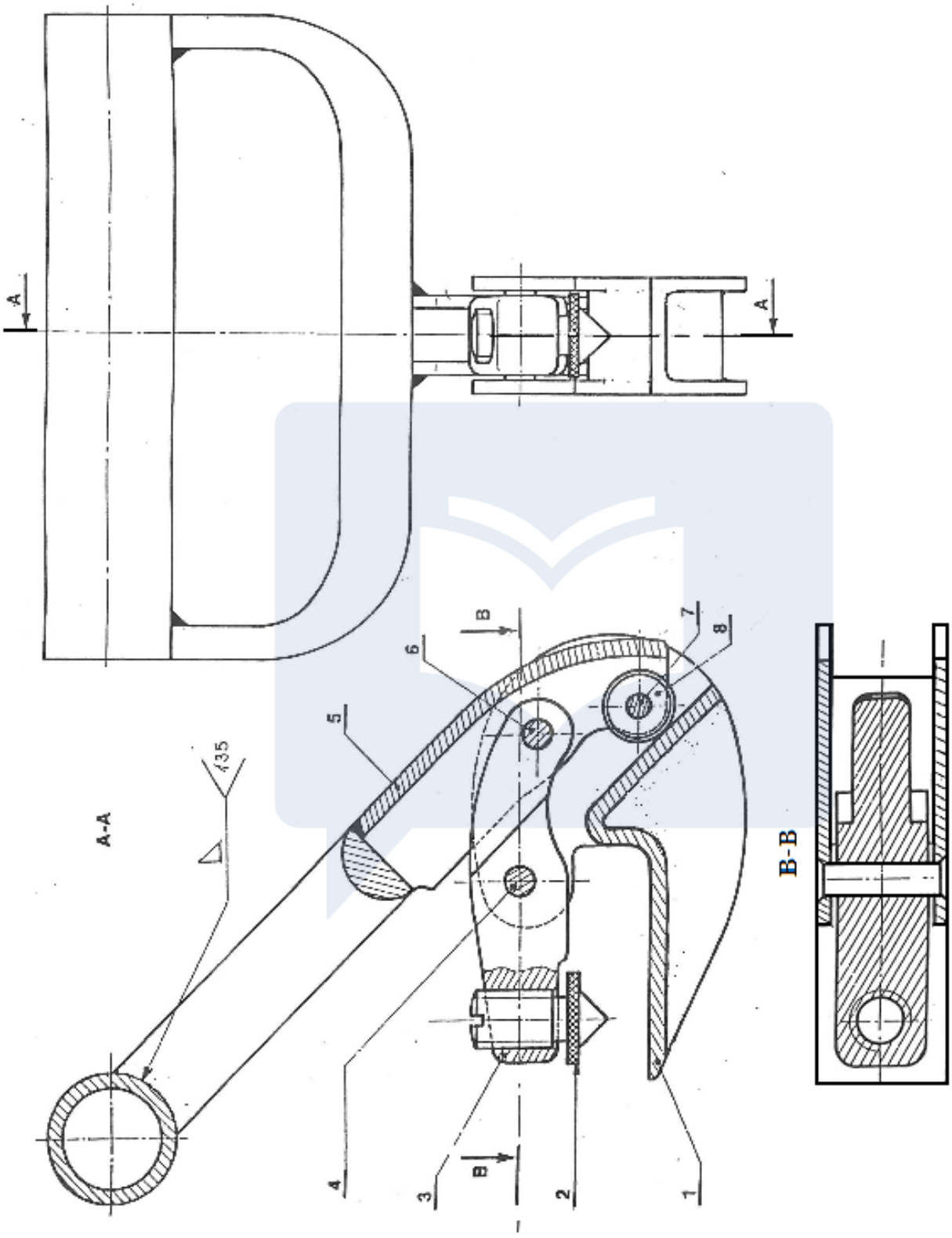


Figure 2 : FUNCTIONAL DIAGRAM

8	1	Roller	
7	1	Axle	
6	1	Axle	
5	1	Handle	
4	1	Axle	
3	1	Lever	
2	1	Conical screw	
1	1	Body	
REF	**NBR**	**DESIGNATION**	**OBSERVATIONS**


A
A
B
B
1
2
3
4
5
6
7
8
135
A-A
B-B

ANSWER SHEET

PART I : TECHNOLOGICAL STUDY

QUESTION 1 : Identification of mechanism elements

A = {_____}

B = {_____}

C = {_____}

D = {_____}

QUESTION 2 : Links

2.a) Nature of the movement for the piece **3** in respect to the piece **1** ;_____

_____

2.b) Deduction of the name and mode for the link between the assemblies **3** and **1**.

Name of the link _____

Mode of the link_____

QUESTION 3 : Fits and Tolerances

The fit between **3** and **6** is Ø 8H7f6 giving for the bore Ø 8^{+15}_{0} and the shaft Ø 8^{-13}_{-26}

3.a) Calculation of the Maximum clearance _____

_____

_____

Calculation of the minimum clearance _____

_____

_____

3b) Deduction for the nature of the _____

_____

QUESTION 4 : Designation of fasteners

4.a) Standard designation of the piece **2** _____ _____

_____

4.b) Function of the threading :

_____

_____

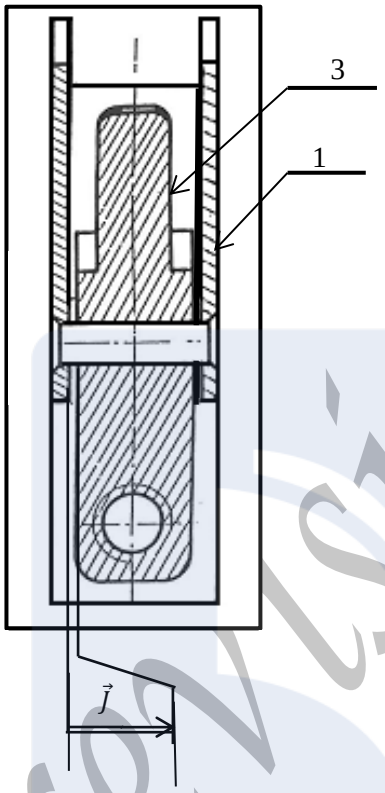
Function of the knurling :

_____

_____

QUESTION 5: Functional Dimensioning

Draw the chain of dimension for the condition $\vec{J}$



PART II : GRAPHICAL STUDY (30mks)