



UNIVERSITY OF JOHANNESBURG
FACULTY OF EDUCATION
JULY SUPPLEMENTARY
EXAMINATION 2017

PROGRAMME: B Ed (INTERMEDIATE PHASE)
MODULE: SCIENCE AND TECHNOLOGY FOR THE INTERMEDIATE
 PHASE 2
CODE: SATINA 2
TIME: 2 hours
MARKS: 100
EXAMINER: Mr W Engelbrecht
MODERATOR: Dr CF Van As (UJ)

(This paper consists of **five (5)** pages and **seven (7)** questions)

INSTRUCTIONS

Read the following instructions carefully before answering the questions:

1. Answer all the questions.
2. Write neatly and legibly.

QUESTION 1

Write short paragraphs on each of the following:

- 1.1 The purpose and nature of Technology education. (4)
- 1.2 The relationship between Science and Technology. (4)
- 1.3 The difference between Technology Education and Educational Technology. (4)

[12]

QUESTION 2

- 2.1 Name two ways of making frame structures rigid and show how you would implement each by means of freehand sketches. (6)
- 2.2 Figure 1 and Figure 2 shows different tower structures. Analyse the pictures and identify the most stable structure of the two. (2)

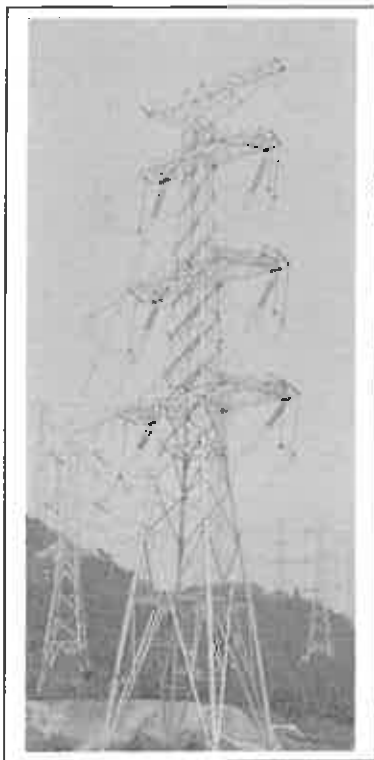


Figure 1



Figure 2

- 2.3 Motivate your answer of 2.2 by referring to building design aspects that influence the stability of a structure. (5)

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QUESTION 3

- 3.1 Identify the mechanism Figure 3 and explain its most important feature by referring to an application. (4)

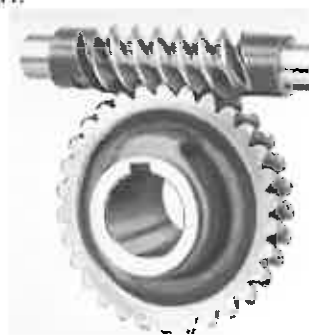


Figure 3

- 3.2 Identify the mechanism Figure 4 and explain its function by referring to an application. (4)

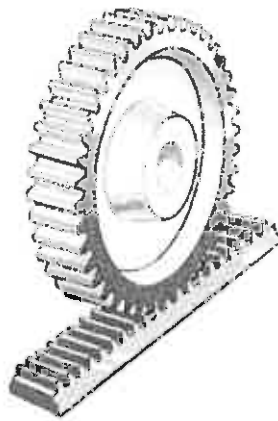


Figure 4

- 3.3 Identify the mechanism in Figure 5 and explain its function by referring to an application. (4)

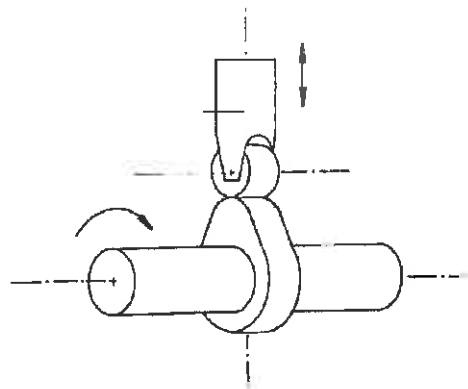


Figure 5

- 3.4 Figure 6 shows tools that represent levers.

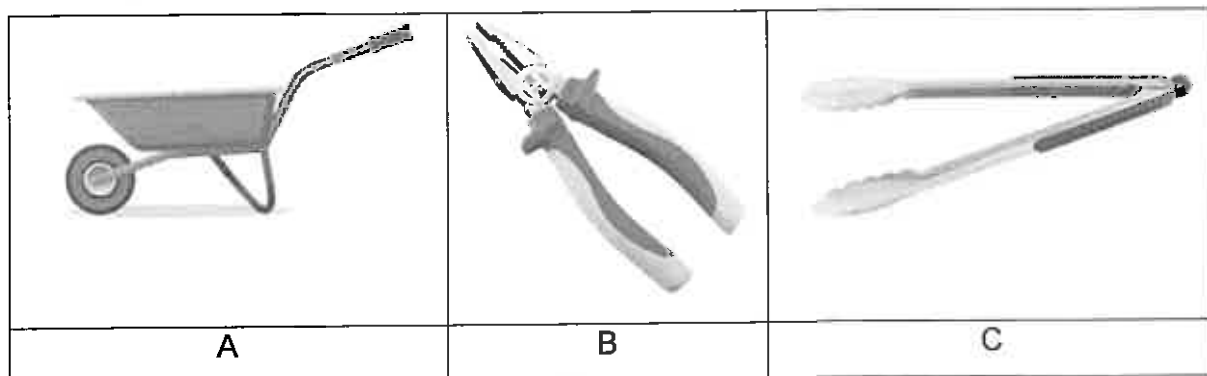


Figure 6

- 3.4.1 Analyse Figure 6 and classify each tool as a class of lever. (3)
- 3.4.2 Make a freehand sketch of A and indicate the load, the fulcrum and the effort on the sketch. (3)

3.4.3 Make a freehand sketch of **B** and indicate the load, the fulcrum and the effort on the sketch. (3)

3.4.4 Make a freehand sketch of **C** and indicate the load, the fulcrum and the effort on the sketch. (3)

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QUESTION 4

Copy the table below in your answer book and differentiate between thermoplastics and thermo-setting plastics by completing the table.

		thermoplastics	thermo-setting plastics	
4.1	Examples of plastics			(2)
4.2	Properties			(4)
4.3	Examples of products			(4)
4.4	Examples of processing			(2)

[12]

QUESTION 5

5.1 Differentiate between plant, animal and mineral textile fibers by referring to an example of each. (6)

5.2 Name two methods of turning yarn into textiles (2)

5.3 Explain why dehydration is such an effective food preservation technique and give two examples of its application. (4)

[14]

QUESTION 6

6.1 Briefly discuss four aspects you need to take into account when deciding on a suitable material for a specific product. (4)

6.2 Differentiate between ferrous metals and non-ferrous metals (2)

6.3 Name the ingredients of concrete and explain why it is called a "composite material". (4)

- 6.4 Figure 7 shows a product made from a ceramic material. Identify the product and the material and briefly describe the process used to make it. (5)

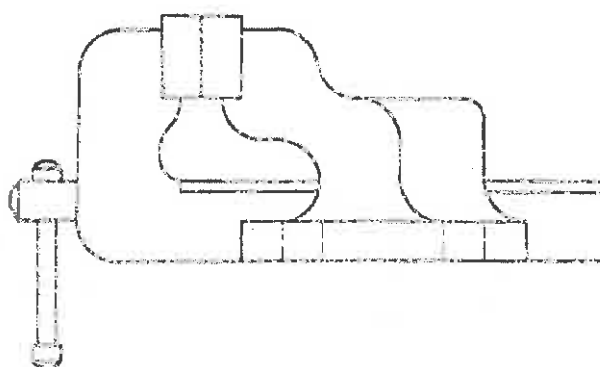


Figure 7

[15]

QUESTION 7

Apply the block method to draw a freehand sketch of the vice, twice the size of the drawing below.



[10]

TOTAL: 100