



## **S6 MATHEMATICS – 3 PERIODS PART A**

**DATE:** 10<sup>th</sup>, June 2019

**DURATION OF THE EXAMINATION:** 45 minutes

**Total: 35 points**

**Non Calculator**

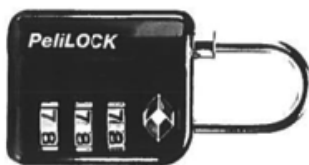


**NUMBER OF PUPILS: 10**

**EXERCISE 1-A:****[5+6]**

A group of 30 students went on a camping trip.

- Of these, 12 returned with both sunburns and insect bites and 20 reported sunburn. How many suffered only insect bites if it is known that three students suffered neither? Draw a **Venn-Diagram** to illustrate the situation.
- In the group, 9 students had food allergies. Of the 16 girls in the group 5 had food allergies. A student from the group is picked at random. What is the probability that they don't have food allergies given that they are a boy? Draw a **two-way table** to illustrate the situation.

**EXERCISE 2-A:****[4+2]**

A lock consists of three wheels with the digits 0 to 9.

- Knowing that each digit has only been used once, what is the maximum number of attempts that must be made before the lock will open?
- What is the probability that the lock will open on the first try?

**EXERCISE 3-A:****[4+4]**

Consider the data set described by the following frequency table :

Scores	Frequency
10	1
20	3
30	4
50	6
70	1

- Calculate its Mode, Median, Range and Inter-Quartile range.
- Draw a Box-Plot that represents this data set.

**EXERCISE 4-A:****[5+5]**

- A sequence has general formula  $u_n = 15 + 3(n - 1)$ 
  - What type of sequence is it? (State  $u_1$  and  $r$  or  $d$ ).
  - Calculate its 21st term.
- A geometric sequence has the first term equal to 10 and the common ratio equal to  $-2$ .
  - Write a recurrence formula to describe this sequence.
  - Calculate the terms  $u_2$ ,  $u_3$  and  $u_4$ .