

**SANGAM SKM COLLEGE – NADI**

**YEAR 13**

**APPLIED TECHNOLOGY**

**WORKSHEET : 4**

**Question 1 Material science**

Draw and label the three types of Primary bond in the spaces provided given below.

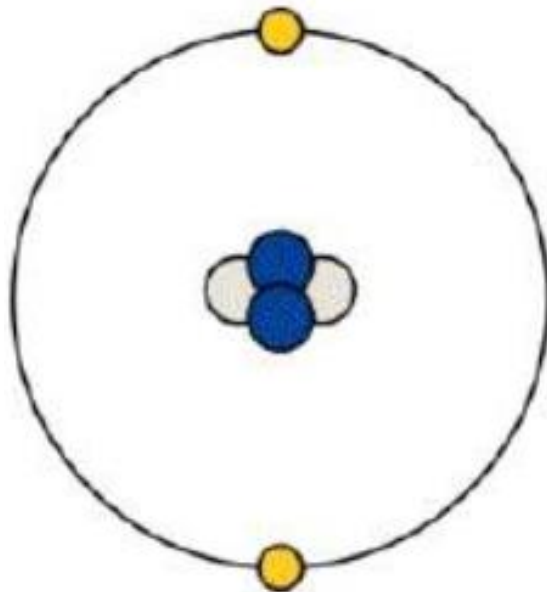
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**Question 2 Material Science**

**Given:** Atomic Structure.

**Required:**

- i. Label the parts of the Atomic structure.



- ii. Write the formulae to calculate the number of electrons in the outermost shell.

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**Question 3                      Design**

**Problem:** Many people feel anxious about leaving their homes unattended at night and during holidays because of the risk of being burgled.

**Brief:** Design a **burglar bar unit** for a 2 frame window.

**Specification:**

The **burglar bar unit** should be:

1.        strong, stable and rigid.
2.        safe and comfortable for the user.
3.        easily mounted to the window frame.
4.        made from a combination of metal and wood.

**Requirements:**

(a)     Produce **two** freehand pictorial sketches of the **burglar bar unit**.

Possible Solution 1	Possible Solution 2
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(b)     Evaluate under the following headings

1. Materials

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2. Ergonomics

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3. Strength

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