$L| - C.B.$

$\checkmark \sqcap :- V.B$

$C.B.$

$V.B.$

Intrinsic semiconductor :- ↑↑

Pure semiconductor.

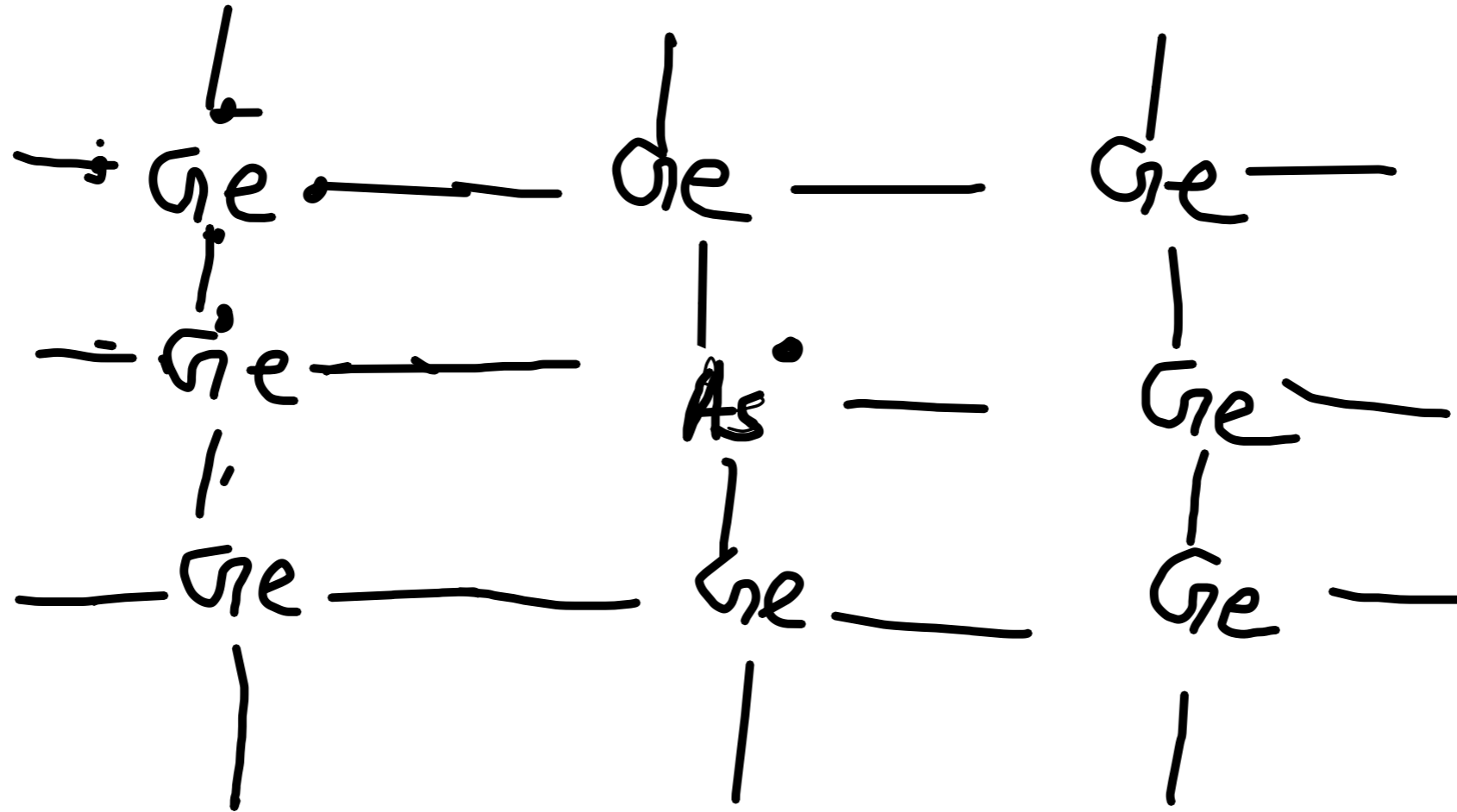At high temp. conduct^n increases.

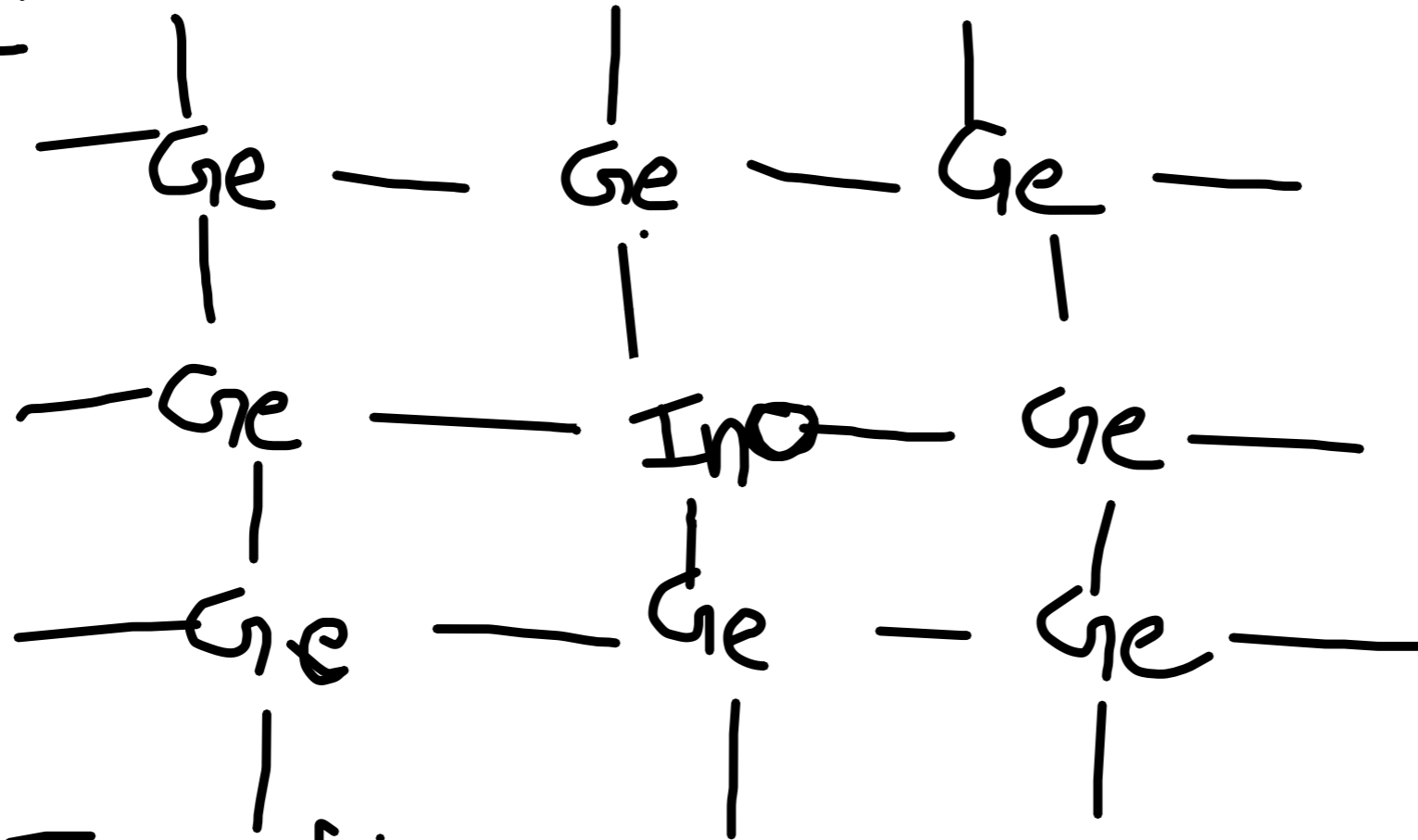**Extrinsic semiconductor :-**

By doping it can be prepared.

two types :- n-type semiconductor

P-type semiconductor

n-type semiconductor :-

Gr-ly — Ge.   valance $e^- = 4$

$$
\begin{array}{ccccc}
 & | & & | & & | \\
\rightarrow \dot{G}e & - & Ge & - & Ge & - \\
 & | & & | & & | \\
= Ge & - & As\,\bullet & - & Ge & - \\
 & | & & | & & | \\
- Ge & - & Ge & - & Ge & - \\
 & | & & | & & | \\
\end{array}
$$

p-type :-

```
         |              |              |
     ___Ge ___     ___ Ge ___     ___ Ge ___
         |              |              |
         |              |              |
   ___Ge _____     ___ In ___     ___ Ge ___
         |              |              |
         |              |              |
   ___Ge _____     ___ Ge ___     ___ Ge ___
         |              |              |
```

n-p Junction :-

✓

n-type	p-type

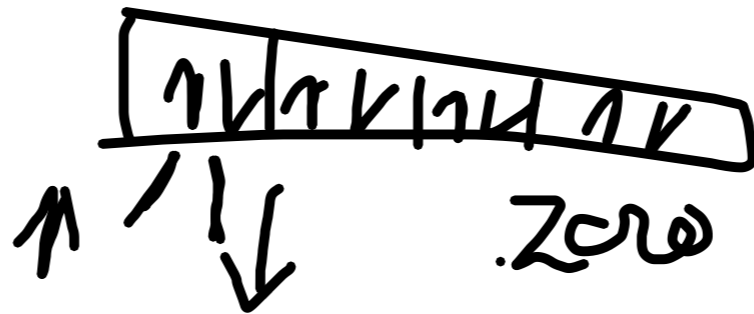# Magnetic :-

Para magnetic :-
weakly attracted by magnetic field.
lose magnetism in absence of magnetic "

Diamagnetic :-
repelled by M.L.f

$\uparrow / \downarrow$ Zero

ferro magnetic :-   strongly attracted M. L. f.

$\uparrow \quad \uparrow \quad \uparrow \quad \uparrow \quad \uparrow \quad \uparrow$

anti ferro :-

↑ ↓ ↑ ↓ ↑ ↓

ferri : -

↑↑ ↓↓ ↑

un equal alignment

An element with molar mass 2.7×10^{-2} kg mol^{-1} forms a cubic unit cell. Edge length 405 pm. If density 2.7×10^{3} kg mol^{-1}. What is the nature of the unit cell.

$$z = ?$$

Classify the following solid :-

tetraphosphorus decoxide (P_4O_{10}) :- molecular

Graphite — co-valent

Brass — Metallic

ammonium phosphate $(NH_4)_3PO_4$ — ionic

SiC — co-valent   LiBr — ionic

Rb — metallic

I_2 — molecular P_4 — molecular

                          Si — co-valent

Plastic — Amorphous   glass :- amorphous

How many lattic point are there in fcc & Bcc

In fcc :—

$$\begin{array}{l} \text{corner} = 8 \\ \text{face} = 6 \\ \hline 14 \end{array}$$

In Bcc

$$\begin{array}{l} \text{corner} = 8 \\ \text{body centre} = 1 \\ \hline 9 \end{array}$$