1. **Fill in the blanks in the following sentences about metallic materials using the following words:**

Electricity - Carbon - Copper - Zinc -corrosion - tinplate - malleable - percentage(x2) - iron(x2) - cast iron - ductile- alloy -

a) Depending on the ..... of .....in the alloy, ferrous materials can be classified as: ....., steel and ....
b) Metals are very good conductors of electric current, so they have lots of applications in .....and electronics.
c) Some metals are.....so we can press them into thin sheets, and they will not break.
d) .....is widely used in the manufacture of tin cans.
e) Copper is very ....., so we can make wires out of it.
f) Steel is harder than .....because it has a higher ..... of carbon.
g) Metals can be treated to protect them from..... Or to improve their appearance.
h) An.....is a mixture or two or more metals, or of a metal and non-metallic component.
i) Brass is and alloy of ..... and .....

2. **Fill in the blanks in the sentences below using the following words:**

Punch - Filler - Iron (x3) - conductor - non-ferrous- Conductors - solid - nuts - bolts - Electricity - sound -cast iron - hacksaws - malleable - rust(x2) - pliers- hard-resistant - chrome- ductile(x2) - hammer - alloyed - polluting gases- light -tough- shaped - washing ore - expand - brittle - magnetic - ferrous- steel- hard - Easy -bronze - brass -jack- filing - glue.

a) We have known about and used metals since ancient times, but it is not easy to find them in their pure from. They are usually ..... with other.
b) The metals group has some common properties:
   - Mechanical properties. They are ..... and ..... and can be .....and ductile.
   - Thermal properties: they are very good ..... of heat; they .....and contract and can be soldered easily.

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- Electrical and magnetic properties. They are very good conductors of ……. Some are ……
- Other properties: They …… easily, conduct….. and are…. at room temperature (except for Mercury).

c) According to their composition, metals can be classified as…… (if they contain mainly ……) and ……. (if they do not contain…….).

d) Ferrous metals are formed by iron and its alloys with carbon:

- ……: contains less than 0,1% carbon. It is …… and does not have many applications.
- ……: iron with 0,1% to 2% carbon. It is and easy to work with. It is widely used.
- ……: iron with 2% to 6,67% carbon. It is very …….but it is not as tough as steel.

e) There are many non-ferrous metals. In this unit we have studied:

- Copper: it is very good……. of heat and electricity. It is very ……and malleable and can be ……. easily.
- Tin: it is …….to work with and melt. It is used as a …. metal soft for soldering. When it is alloyed with copper it is called …….
- Aluminium: it is very ……., highly …… to corrosion, non-toxic and easy to shape. It has many applications.
- Zinc: it is malleable, …… and very resistant to corrosion. It is mainly used to protect other metals from ……. When it is alloyed with copper it is called……

f) Before working with metals, we must know which tools to use.

- Measurements and layout: ruler, set square, compass, centre punch.
- Holding and bending gloves, ……, vice, ……
- Cutting: pliers, tinsnips, …….
- Perforating: …… and ……., drill.
- ……: fill.
- Joints: rivets, ……, soldering, …… and ……, pins.
- Treatments: rust-inhibiting paint, ……

g) Both metal production processes and metal treatments have a major environmental impact: emissions of …… …….. in mines, water pollution by …… …….. etc.

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