

Unit 13 Metals

A Multiple-choice questions

1. B
2. A
3. B
4. D
5. B
6. D
7. B
8. A
9. A
10. C

B True or false questions

1. F
2. T
3. F
4. T
5. F

C Fill-in-the-blanks

1. malleable
2. gold panning
3. carbon reduction
4. Bronze
5. Solder

D Short questions

1. Tin. Because its melting point is the lowest. It can be melt more easily.
2. An alloy is a mixture of metals and other elements.
Example: brass, bronze, solder, steel (any ONE or other reasonable answers)
3. Metals conduct heat faster than china. The meat on a metal plate absorbs more heat in a shorter period of time.
4. (a): iron
(b): iron sulphide
(c): sulphur
5. The high land costs and labour costs limit the development of waste metal recovery industry. /
The general public does not have enough environmental awareness to actively collect metals for recycling. (or other reasonable answers)

E Long questions

1.

- a Crushing is a physical change. Extraction is a chemical change.
- b Heat copper ore containing copper oxide with carbon.
- c $\text{Copper oxide} + \text{carbon} \longrightarrow \text{copper} + \text{carbon dioxide}$
- d Copper has a shiny appearance while copper oxide has a dull appearance.

2.

- a The layer of aluminium oxide is very compact. Oxygen cannot react with the aluminium atoms beneath the oxide layer. No more oxide will then be formed.
- b If iron is used to make window frames, iron will react with oxygen in the air. However, the layer of iron oxide is loosely packed. Part of it will fall out. Oxygen can further react with the iron atoms beneath the oxide layer. More oxides will then be formed which weaken the structure of the window frames.
- c We can improve the property of iron by mixing it with other elements to form alloys. (e.g. steel)

3.

- a It can save the limited resource. / It can reduce the use of landfill sites. / It can reduce land pollution. (any TWO)
- b To melt the iron.
- c Reuse: keep the iron containers and use them again.
Replace: replace the iron containers with recycled paper containers.
(or other reasonable answers)