

Topic: Using Earth's resources

Revision Quick Fire Questions – To accompany Learn Sheet

Water

1. What is potable water?
2. What must potable water not contain (or have very little of)?
3. What are the two main steps of treating water? Write a little bit about each step.
4. What is the general name of the **overall process** of purifying water (often used in arid, desert-like places where fresh water isn't readily available)?
5. Name and briefly describe the two methods used.
6. What is the drawback of using these methods?
7. How is waste water treated? Briefly outline the steps taken to do this.
8. Where does waste water come from?

Metals

9. There are two methods of extracting metals (specifically copper) from low grade ores – bullet-point these two methods?
10. After a solution of copper is achieved by these two methods, name two ways in which copper is extracted from its solutions.
11. How are alloys different to pure metals? Also, draw particle diagrams of how alloys and pure metals look.
12. What properties do alloys have that makes them advantageous to use when compared to pure metals? Give reasons for these.
13. Give three ways with which metals are prevented from corrosion. Give reasons for how and why they prevent this corrosion.
14. What is needed for iron to rust? Draw a diagram of an experiment that proves this.

Using Earth's resources – Green chemistry

15. What is sustainability?
16. What does finite and infinite resources mean? Gove some examples of both.
17. Why is it important to recycle, reuse and reduce the materials we use?
18. Why are LCAs carried out? What are they?
19. With regard to LCAs, what do some companies do to make themselves look better than they actually are?

Ceramics, polymers and composites

20. What is a composite? Give some examples.
21. Give two reasons why the properties of different plastics differ from one another.
22. What is the difference between thermosetting and thermosoftening plastics? Give reasons for the differences in the properties AND relate this to their properties.
23. Why are ceramic materials used as food dishes? What properties do they have that makes it okay to use to eat off?
24. Name two different types of glass. What are their uses?

The Haber process

25. Write the word and balanced symbol equation for the Haber process. Include state symbols.
26. What is different about the equation's arrow? What does this mean?
27. How does Le Chatelier's principle relate to the Haber process?

28. What is the main use of the ammonia?
29. Where is hydrogen and nitrogen sourced from?
30. Write the conditions used in the Haber process.
31. The forward reaction for Haber process is exothermic. Le Chatelier's principle suggests that a lower operating temperature would give a better yield. Why isn't a much lower temperature used?
32. What pressure is used? Why is this pressure used? Why isn't a higher pressure used given that it would give a higher yield than the one used?
33. When ammonia is produced, it is gaseous, what happens to it after that? Why is its state changed?
34. Why is the iron catalyst finely divided? Use your knowledge from the rates of reaction topic to give a good in-depth answer (use the collision theory to help you answer this question well.)

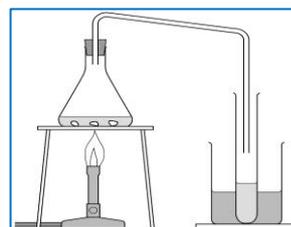
NPK fertilisers

35. Which elements **must** be contained in NPK fertilisers?
36. Why are NPK fertilisers described as being formulations?
37. What is the purpose of fertilisers?
38. NPK fertilisers are made from salts. Name two salts and a rock that are mined to produce fertilisers.
39. Some salts used in fertilisers are manufactured using ammonia that is reacted with three acids. Fill in the gaps below

Ammonia and _____ react to make _____ nitrate
 Ammonia and _____ react to make _____ sulphate
 Ammonia and _____ react to make _____ phosphate

Required Practical – Water purification

40. The diagram below shows a method of separation/purification. What is the name of this method?
41. What two processes need to happen for distillation to occur?
42. Why is iced water used?
43. Why is a Bunsen needed?



44. Would you expect to see any solid left on the watch glass after evaporation? Why?
45. What would you expect to see after evaporating water off from seawater? Why?

