

MANUFACTURE OF PRINTED CIRCUIT BOARDS

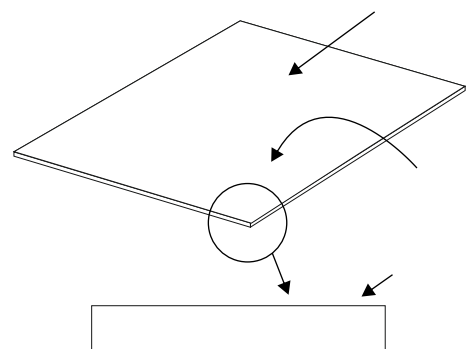
USEFUL LINK: <https://technologystudent.com/pcb/pcbcnc.htm>

1. Why are ferric chloride and clear etchants regarded as dangerous to handle and environmentally unfriendly? This argument is sometimes put forward by those who prefer to manufacture PCBs on CNC machines. **2 marks**

2. Why are CNC machines regarded as cleaner and safer to use (compared to chemicals), in the manufacture of PCBs. **2 marks**

3. Although the use of copper clad board is environmentally friendly, what is its main disadvantage in the production of PCBs, compared to chemicals? **1 mark**

4. In the space opposite, complete the drawing of copper clad board. Include labels, such as GRP, copper surface etc..... Also add appropriate colour and shade. **3 marks**



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5. Describe how PCBs can pollute the environment, especially the sea. You may wish to use the North Sea (UK), as an example of the type of damage that can happen. **2 marks**

6. Below are three symbols / logos associated with Health and Safety and the handling of chemicals, related to Printed Circuit Board manufacture. Complete the symbols by adding the missing parts and colour /shade. **6 marks**

