ATE Laboratory using the IEEE-488 Bus

N.B. 10 minutes reading time - No equipment to be touched!

BACKGROUND

You have just arrived at a small electrical engineering firm, to take up a position as an engineer. The technical director has called you in to tell you of the companies latest crises. They have produced a batch of 1000 filter modules and found from a small sample that a significant percentage is out of specification. You and another new recruit are to work as a team and produce a computer based test system, which an untrained technician can use, to pass or fail the devices. (N.B. The laboratory filter module is "switchable"; switch position 5 is "in spec", and all other positions are "out of spec".) The technical director, who is extremely busy, has pointed out to you the test equipment that has an IEEE-488 interface and the relevant test manuals and has left you to get on with it! It is in your interest to prove to the technical director your level of competence on this your first assignment.

APPROACH

1) Write down a rough plan of action including 'who is doing what'.
2) Work out what you are to test for and indicate the pass/fail criterion.
3) Keep detailed notes as you progress. NB. In a complex testing situation, take things in stages e.g., get one instrument functioning at a simple level under computer control, **then** introduce more complexity.
4) You will probably have to ask the technical director (lecturer) certain questions, but think first whether they are realistic.
5) Finally, test the system: - does it measure what you think it measures, is it calibrated, is it robust etc?

ASSESSMENT

You will be assessed as you progress on how you solve the problems you encounter, the detail of notes that you write down, and of slightly less importance - the final working system. NB. The notes that you write are for your benefit. They should contain all relevant technical details, which might be checked by the technical director. These notes should also be concise and clear so that if he temporarily removes you from this job, they will allow you to start from where you left off.

Marks will be allocated as follows:-

Original specification notes (inspected during the first hour)	25%
Working notes	25%
Final System	50%

FINALLY

Near the end of the session, stand back from what you've been doing and try to assess what you've done. Have you approached the task in the most efficient manner? What could have been improved? Look at your notes - could you pickup where you've left off after a month break? Are your notes self-explanatory?