CCIE NOTES from Michael Zuo CCIE #17800

Those notes from Michael Zuo CCIE #17800 Following is what he has to say : I passed my CCIE R&S certification exam after 2 years of study (#17800) over this period of 2 years, i have painstakingly noted down all the issues, gotcha's, easy-to-forget things and tricks i have run across during my studies and doing InternetworkExpert, Netmaster/NMC and NLI/ccbootcamp labs. i also summarized some studying strategies/approaches and "game plan" for taking the exam These notes document things i personally found useful in the course of studying for and passing my CCIE R&S Lab exam. even with my notes, you still have to study for the exam there is no substitute for hard work but not all the hard work is necessary. you can use these notes for a number of things: 1. Find out where you are knowledge wise. if you are already familiar with most of issues documented in these notes, you are probably pretty close 2. save some time consolidating your knowledge 3. learn some of the tricks i learned from various sources and found useful 4. avoid making the same stupid mistakes that i have made (ever forget to configure "mls qos" or "switchport port-security" commands and lose points for the whole section? **General Approach and Studying Strategy**] **Mentality** ========== "you have not failed till you stop trying" almost everyone fails their CCIE lab attempts. it takes avarage of 2.8 tries to pass. this means they are testing your tenacity as well as your knowledge and skills. you failed the test the moment you say to yourself "that is it, i give up". when i was taking my 3rd lab test (the time i passed), i was already mentally ready for taking the 4th lab attempt if my 3rd one fails. i was saying to myself "i will take this test again and again till i pass" "sticking with it" and not giving up is definite part of the lab test Burnout ========= watch yourself for burnout. just because you are studying for CCIE, doesn't mean you can't take some time off to re-group. **General Studying Strategy** ========== 1. write notes. write down the following things in a word/text file and review them periodically and before lab exam: mistakes from doing practice labs tricks from practice labe solutions questions/answers from groupstudy emails things that are easy to forget sample configurations from Cisco documentation/other sources that are useful your game plan for the lab exam (this game plan need to be revised and refined while doing practice labs so that it suits your own abilities and strength) 2. practice at least one mock lab per week. this will refresh you knowledge and keep you "fit" for the lab exam. sort of like running a marathon everyweek to prepare for you marathon competition 3. lab it up. for all the little things you are not sure about and/or commands not familiar with, lab'ing it up is very useful because it clears up your understanding, helps you to remember what your learned and get you familiar with relevant debug/verify commands. another benefit is that it increase your speed of configuration, especially for core topics such as routing. this is very important as discussed later on. **Groupstudy email list** ========== groupstudy.com email list is very helpful in term of getting answers for your questions and clearing up confusions. this need to be combined with "lab'ing" it up to maximize the learning process. but be careful not be spend too much time reading all the emails, this would take way too much time than necessary. just focus on topics that are directly related to the lab exam and increase your knowledge (e.g. emails about lab dates, lab equipment, ATM configuration, who passed and who failed and so on can just be ignored because they do not help you to pass the lab) **On Sections you usually don't do well** ========== think about why you didn't/don't do well in specific sections. it is usually one of the following scenarios: A. the area of knowledge has not "clicked" in your head. you know how to do certain things but just can not seem to get it right when you do the mock labs. suggestions: 1. take a step back and starting looking at the area of knowledge (e.g. QoS or multicast) at a higher level. consolidate your knowledge: what are the different scenarios that can be presented to you in the lab (e.g. different types of mutlicast and how are they different from each other)? how to configure each scenario (e.g. how to configure Sparse mode, dense mode, and sparse-dense mode)? what are the multiple alternate configuration methods of configuring the same thing (e.g. in sparse mode, how many ways are there to configure the RP?) what are the things that need to be pay attention to (e.g. is mroute needed to route multicast traffic)? how to verify your configuration works (e.g. multicast ping)? 2. look for sources where consolidated knwoledge is available. examples: Cisco doc CD that summarizes a specific technology internetworkexpert.com has class on demand that is very helpful. a little expensive ($900) but might just put you over the last hurdle 3. try to understand why things are done a certain way (e.g. why is mroute needed? because RPF checks. why is RPF checks needed? to avoid multicast traffic being forwarded in loops. why would multicast traffic be forward in loops? because route blindly send out multicast traffic on all multicast interfaces in dense mode) B. you know the section well but always screw up on the little things. a good example for this is security: you always forget the "permit ip any any" at the end or miss an optional keyword here and there. little things like this cause you to lose points for the whole section suggestions: 1. figure out what they are trying to test you from reading the question (this comes from experience and practice). 2. practice and practice, after you have done something a hundred times, you WILL remember how to do it and what not to forget. 3. write notes and summarize what you have learned because mostly likely you will not remember the revelation you had or some stupid mistake you made in a mock lab

two months ago. **On Sections you usually do well** ========== also, just a tip, as for myself, i was very comfortable with routing protocols for the 2nd try. but that was not enough to pass, i realized that even though i knew how to do things, i was not FAST enough with the things i am comfortable. that means i had less time to deal with things i am not 100% confident with or debugging any problems that came up. so my suggestion would be: for topics you are comfortable with, practice for speed. for topic you are less confident with, practice to consolidation your understanding (not just how, but why) **Asking questions during the Lab exam** ========== do not expect the proctor will give you hints or help you with things you do not understand. they are there to clarify ambiguity only. if you ask them "i don't understand question X, what does it mean by yyyy", they will not give you any more information than what is in your exam description. instead, you need to show them that you fully understand the topic, confident with what you know and just need some clarification: "i understand that question X is asking me to configure yyyyy on this router, if i use method A, this would happen and if use method B, this would happen. which one is the desired result/outcome?" **After you take the lab test** ========== Doesn't matter if you think you passed or screwed up everything, you will have lingering questions such as "i didn't know how to do XXXX" or "i am not sure i did YYYY right". write these questions down right after the lab test and lab it up at home and find the answer. you might discover a whole topic that you missed during studying or you did not fully understand some topic. it also make sure that if you ran into similiar issues in the next lab attempt (should you fail this one), you have it down solid **Tips from Cisco** (http://www.cisco.com/web/learning/le3/ccie/rs/lab_exam_tips.html) : ========== these tips are spot-on and make 100% sense from my personal experience STUDY TIPS ========== Assessing Strengths Using the content blueprint, determine your experience and knowledge in the major topic areas. For areas of strength, practicing for speed should be your focus. For weak areas, you may need training or book study in addition to practice. Study Materials Choose lab materials that provide configuration examples and take a hands-on approach. Look for materials that are approved or provided by Cisco and its Learning Partners. Hands-On Practice Build and practice lab scenarios on a per topic basis. Go beyond the basics and practice additional features. Learn the show and debug commands along with each topic. If a protocol has multiple ways of configuring a feature, practice all of them. Cisco Documentation CD Make sure you can navigate the Cisco documentation CD with confidence because this is the only resource you will be allowed during the lab. Make the CD part of your regular study; if you are familiar with it, you can save time during the exam. As of March 2006, the documentation can only be navigated using the index; the search function has been disabled. Home Labs Although acquiring a personal home lab is ideal, it can be costly to gather all the equipment you will need. For the hardware devices that are costly to obtain, you may be able to rent the equipment online at a more reasonable cost. **TEN TIPS FOR TAKING THE LAB EXAM** ========== 1. Read the entire exam first and check for addressing issues. Do not skip any details or sections. 2. Manage your time. Make a plan to cover all the sections in the time provided. Work out how much time you will spend on each section, keeping in mind the point value of the questions. Don't forget to allow time at the end to verify your solutions. 3. Clarify the requirements of each question. Don't assume requirements that aren't mentioned in the question. During the lab, if you are in any doubt, verify your understanding of the question with the proctor. 4. Do each question as a unit. Configure and verify before moving to the next question. You may want to redraw the topology with all the details available. This will help you visualize and map the network. 5. Troubleshoot. You must know how to troubleshoot using the tools available. Although troubleshooting is important, don't lose too much time working on a 2- or 3-point question. If you're caught off-guard by an unfamiliar topic, don't let it absorb too much time. Work on the things you are more comfortable with and go back to difficult items later. 6. Keep a list. During the exam, make notes on configurations and settings as you move through the exam. Make a separate list for items you have not been able to address or where you have not achieved the desired result which you'll need to revisit. 7. Test your work. Never rely on a configuration done in the early hours of the exam. There is a possibility that an item you configured a few sections earlier can become broken and non-functional. Keep in mind that points are awarded for working configuration only. 8. Save your configurations often. 9. Don't make any drastic changes in the last half hour of the exam. 10. Speed is vital on the exam. Review and practice core material the week before the exam to ensure you can move quickly through the less challenging questions.