

Senior Certification Essays

by **Ralph Hogan, CPBE, DRB, CBNT**

SBE Vice President, SBE National Certification Committee member



The SBE national certification committee and chapter certification chairs often hear from members that some are afraid to take the senior-level exams

because of the closed-book essay question. Not to fear – the government is here to help you. Each senior exam has 50 multiple-choice questions (which are open book) and three closed-book essay questions selected by a member of the National Certification Committee based upon the experience that is included in the application. Of the three questions presented, the examinee selects one for completion. It is to the benefit of the individual taking the test to incorporate information on the application in only those areas in which he or she is experienced. This enables the national committee to assign essays the applicant should be able to answer successfully. When no or very little information is given, essays can be randomly assigned by the nature of the applicant's job listed on the application such as radio or TV. This means the

questions may cover areas in which the applicant is not familiar.

Most senior essays require several paragraphs to complete, while others may only require a diagram or two with labels and some explanation of the configuration of the diagram. Very few questions require much more than this. The more complete and detailed the answer the easier it is for the certification committee reviewers to grade the essay and give full or partial credit. Remember, the applicant answers the essay of his or her own choosing.

With the industry transition in the United States from analog TV to digital, a number of the analog television essays were recently retired from use. The xam question below was actually used in the exam pool until recently.

Question: NTSC TV Transmitter Maintenance *(answer on page 7)*

A television transmitter has excessive chroma and a very crisp picture. Make a simple drawing of how the response would look if you made a sweep of the transmitter. Write a short paragraph explaining the drawing.

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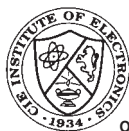
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RADIO GUYS *from page 4*

or 11.2 kHz emission designator before January 1, 2013. This does not by itself trigger a new construction notification after your Part 90 license is modified, but you have to get a Part 90 frequency coordinator to coordinate that application.

If you have a license that shows both 25 and 12.5 kHz channel bandwidths, or emission designators indicating both channel bandwidths, you do not have to modify the Part 90 license to delete the wideband emission designator. The FCC will presume that you are using multimode equipment and that after January 1, 2013 that you will be operating in the narrowband mode only. Check your multimode equipment, however, to make sure it is operating in the narrowband mode only after January 1, 2013 at the latest. Also, at some point, the FCC will require a certification that you are operating in the narrowband mode only.

FCC will begin shortly, if they have not already, placing notifications on new, modified and renewed Part 90 licenses about these deadlines. But you may not get one, since the license terms of these licenses are so long. So, again, heads up!



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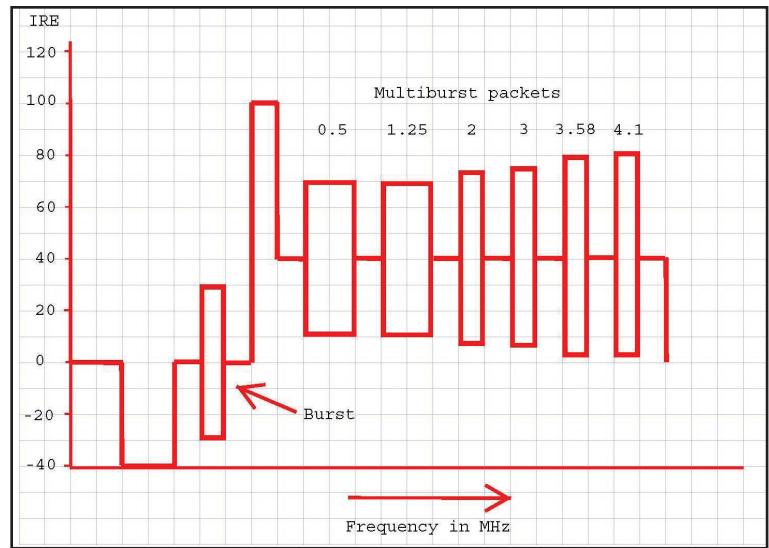
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Brian Goodman, Eau Claire, WI – Chapter 112

Answer (from page 6):



For this question, a multiburst test signal is used to sweep the transmitter and viewed as a demodulated video signal from a high quality RF demodulator on a properly calibrated and terminated waveform monitor. For a perfect system response, the multiburst display would show all packets as having the same peak-to-peak amplitude and the burst signal would be ± 20 IRE. As the displayed response in the drawing shows, the higher frequencies of the test signal are larger and since this is where the chroma and detail information of the NTSC signal is carried the resultant picture displayed would have excessive chroma and possibly sparkles and overly emphasized edges.

As you can see, if you are familiar with the subject, the answer should come easily. In most cases, the applicant can draw from practical experience and compose a response to the question. It cannot be overly stressed that legibility and the use of a straight edge to construct "clean" drawing is important. Use of good penmanship is encouraged as it reflects the communications capability that a good broadcast engineer should possess.

Fear of the unknown does not set well with most people, so having seen an example of a senior-level essay question will hopefully put your mind at rest. If you have been in the industry for the requisite 10 years and have been working in your area of expertise, there should be nothing to fear in taking the senior-level exams.

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