

John Pauly Quals Questions 2015

- 1) How does the broadcast AM signal work? Why was broadcast AM done this way?
- 2) Do you need both sidebands of the AM signal? If not, why would you do this?
- 3) How does FM work? What are the advantages and disadvantages?
- 4) If you have a fixed transmit power on a specified frequency, which one of these could be detected at the greatest range?

Students could do well without knowing the specifics of these systems. I would provide prompts for the aspects they were unsure of. I was mostly looking for how comfortable students were with thinking in the frequency domain, and intuition for concepts such as modulation, bandwidth, and power.