1. What are the 4 engineering factors associated with the design of antennas.

2. a) Calculate the length, in meters, of a dipole antenna that is designed to receive a station at AM 800 on the dial of an AM radio.

   b) Calculate the length, in meters, of a dipole antenna that is designed to receive the FM station at 107.1MHz.

4. How much gain, as a ratio and in dBi, does a dipole have with respect to an isotropic radiator?

5. Describe the horizontal radiation pattern of a dipole. How does this differ from the three-dimensional pattern?

6. The power applied to an antenna with a gain of 4dB is 13W. What is the EIRP?

7. What does it mean for an antenna to have directivity and what are the advantages and disadvantages of a directional antenna?

8. Name the three basic elements in a Yagi antenna.
9. The length of the driven element in a Yagi antenna is 900mm; what is its operating frequency?

10. The forward lobe of an antenna has a relative gain of 18dB at its peak point of forward direction. The same antenna has a relative loss of 5dB at the peak point of its rear lobe. Determine the front-to-back ratio (aka side lobe level) of the antenna.

11. From the antenna pattern of a certain type of antenna, the following relative gain and angle information was obtained:

10dB at 0°  7dB at +/-15°  5dB at +/-22°  0dB at +/-30°

What is the beamwidth of this antenna?