H47

B. Tech. EXAMINATION, 2020

(Eighth Semester)

(B Scheme) (Re-appear Only)

(ECE)

ECE414B

RADAR AND SONAR ENGINEERING

*Time : 2½ Hour*s]   [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Four* questions in all. All questions carry equal marks.

1. (a) Mention and briefly describe all the system losses encountered in Radar System.

   (b) Explain the basic principle of operation of Radar System.

2. (a) What is minimum detectable signal ? Derive expression for the same.

   (b) Give simple form of Radar Equation.

3. (a) What is Doppler frequency shift ? Explain the working of Frequency-modulated CW Radar.

   (b) Give characteristics of high-prf, medium-prf and low-prf radars.

4. (a) Write a detailed note on Staggered Pulse repetition frequencies.

   (b) Mention various limitations of MTI Radar performance.

5. (a) Explain various types of mixers used in radar receivers.

   (b) Write a note on Range Glint.

6. Write a detailed note on Conical Scanning along with suitable diagrams.

7. (a) Classify and explain types of Sonar Systems.

    (b) Write a note on Sonar system performance.

8. (a) Write a detailed note on Sonar transducers.

    (b) Write about the types of noise in Sonar system.