Code: **ECMC2T5C**

I M.Tech - II Semester-Regular Examinations – September 2015

RADAR SIGNAL PROCESSING
(MICROWAVE & COMMUNICATION ENGINEERING)

Duration: 3 hours   Marks: 5x14=70

Answer any FIVE questions.   All questions carry equal marks

1. a) What are various elements of pulsed RADAR? Explain in brief.   7 M

   b) Give the complete nominal RADAR frequency bands with wavelengths. Explain with suitable applications.   7 M

2. a) Explain about Temporal and Spatial Correlation of Clutter?   7 M

   b) What is spectral model? Explain.   7 M

3. a) What is the concept of sampling in the fast time domain? Explain.   7 M

   b) What is quantization in pulsed RADAR signals? Explain.   7 M

4. a) Explain about Straddle Loss and Range Resolution of the Matched Filter. 7 M

b) Define the Ambiguity Function and Discuss the various properties of Ambiguity Function. 7 M

5. a) What is Pulse Burst Waveform? Explain about Matched Filter for the Pulse Burst Waveform. 7 M

b) Write short notes on Costas Frequency Codes. 7 M

6. a) Explain about Blind Speeds and Staggered PRFs. 7 M

b) What is Pulse Doppler Processing Gain? Explain. 7 M

7. a) Discuss about Linear and Square-Law Detectors of Threshold Detection in Coherent Systems. 7 M

b) Explain about Fluctuating and Non-fluctuating Targets under Threshold Detection of Radar Signals. 7 M

8. a) What is the concept of Cell-Averaging CFAR? Explain. 7 M

b) Write short notes on SAR Coverage and Sampling. 7 M