CBCS SCHEME

USN | | | | | | | | | |

15EC833

Eighth Semester B.E. Degree Examination, July/August 2022
Radar Engineering

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. What is Radar? Explain the basic principle of radar. **(04 Marks)**
b. Explain simple form of Radar Equation. **(08 Marks)**
c. Explain PRF, PRI, Duty cycle with respect to radar pulse waveform. **(04 Marks)**

OR

2 a. Explain Radar Block diagram. **(10 Marks)**
b. Explain various applications of RADAR. **(06 Marks)**

Module-2

3 a. Explain detection of signals in noise with reference to minimum detectable signal. **(06 Marks)**
b. Derive the modified Radar Range Equation by considering the signal to noise ratio. **(06 Marks)**
c. Explain the probability of False alarm. **(04 Marks)**

OR

4 a. Explain Radar cross section in the case of simple target. **(10 Marks)**
b. Explain system losses. **(06 Marks)**

Module-3

5 a. Explain simple CW Doppler Radar with the help of block diagram. **(06 Marks)**
b. Explain MTI Radar Block diagram. **(06 Marks)**
c. Write short note Delay Line Cancellers. **(04 Marks)**

OR

6 a. Explain Digital MTI processing. **(10 Marks)**
b. Write a short note on moving target details. **(06 Marks)**

Module-4

7 a. Explain types of tracking radar system. **(08 Marks)**
b. Explain the tracking of Monopulse Radar in one angle coordinate. **(08 Marks)**

OR

8 a. Explain conical scan tracking radar. **(08 Marks)**
b. Write short notes on:
(i) Phase-comparison monopulse **(04 Marks)**
(ii) Sequential lobing. **(04 Marks)**

Module-5

9	a.	Explain the functions of Radar Antenna.	(06 Marks)
	b.	Write short notes on:	
		(i) Directive gain	(05 Marks)
		(ii) Antenna Radiation Pattern	(05 Marks)

OR

10	a.	Explain Noise Figure of Networks in Cascade.	(06 Marks)
	b.	Explain Mixer used in superheterodyne radar receiver.	(05 Marks)
	c.	Write short note on Balanced Duplexer.	(05 Marks)

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