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***B.Tech. Degree VIII Semester Supplementary Examination
August 2018***

**EC/EI 1804 (E2) RADAR AND NAVIGATION
(2012 Scheme)**

Time : 3 Hours

Maximum Marks : 100

**PART A
(Answer ALL questions)**

(8 × 5 = 40)

- I. (a) Define maximum unambiguous range.
- (b) What is meant by integration of radar pulses?
- (c) Why do blind speeds occur? List the methods for reducing the effects of blind speeds.
- (d) Write short notes on delay line-canceller.
- (e) Explain free space path loss.
- (f) What is meant by radar jamming?
- (g) Distinguish between Apogee and Perigee.
- (h) Explain Digital baseband signals.

PART B

(4 × 15 = 60)

- II. (a) Derive the general form of radar range equation. (10)
 - (b) Explain pulse repetition frequency. (5)
- OR**
- III. (a) With the help of a block diagram explain a simple pulsed radar system. (8)
 - (b) What are the different types of radar displays? Explain. (7)
- IV. (a) Explain the operation of sequential lobing and conical scan. (10)
 - (b) Compare monopulse and conical scan tracking radars. (5)
- OR**
- V. (a) Define Doppler frequency in MTI radar. (5)
 - (b) Draw the block diagram of an MTI radar and explain its working in detail. (10)
- VI. (a) Explain in detail about synthetic aperture radar. (10)
 - (b) Define matched filter and give its frequency response function. (5)
- OR**
- VII. (a) Explain the working of microwave radio repeaters with the help of block diagram. (10)
 - (b) Write short notes on microwave radio system gain. (5)
- VIII. (a) Describe satellite digital link design. (8)
 - (b) Explain the principle of Global Positioning System. (7)
- OR**
- IX. What are the various subsystems of a communication satellite? Explain. (15)

