



NBR-003-0271004

Seat No. _____

M. Sc. (ECI) (Sem. X) (CBCS) Examination

April / May – 2017

Radar System & Radio Aids to Navigation : Paper No.-40

Faculty Code : 003

Subject Code : 0271004

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :**
- (1) Attempt all questions.
 - (2) Make suitable diagram whenever necessary.
 - (3) Figure to the right indicates full marks of questions.

- 1 Answer the following questions : 14
(any Seven out of Ten- 2 marks each)
- (a) What is pulse radar?
 - (b) What are the performance criteria for the instrumental Radar?
 - (c) Name the techniques used for the RCS measurement.
 - (d) Define radiated power and Aperture efficiency.
 - (e) Explain Dipole feed.
 - (f) Give abbreviation of RADAR, FMCW RADAR and CW RADAR of RADAR.

- (g) Define Pulse repetition Frequency and Pulse duration.
- (h) What are the frequency agility for the tracking and detection radar?
- (i) What do you mean by navigation and navigation aids ?
- (j) What are the propagation effects in Radar?

2 Answer the following questions:

- (a) Give Application of Radar. 5
- (b) Explain Horn Antenna. 4
- (c) Explain errors in radiation pattern. 4

OR

- (c) Derive relation between gain and capture area. 4

3 Answer the following questions : (7 marks each) 14

- (a) Explain parameter of Antenna.
- (b) Explain instrumental radar.

OR

3 Write short note on :

- (a) Scanning and tracking radar. 5
- (b) Magnetron. 4
- (c) Pulse repetition frequency and pulse duration. 4

4 Answer the following questions : 14

- (a) Explain Radar set with neat and clean Block diagram.
- (b) Give the types of antenna and explain Lens antenna.

5 Answer the following : (any Two out of Four- 7 marks each) **14**

- (a) Explain different types of Feeds.
 - (b) What do you mean by Radar cross section explain its region.
 - (c) What is parabolic reflector antenna and explain its design factors.
 - (d) Explain slow wave structure (TWT) and klystron amplifier in detail.
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