



TFD (15) — 6045

Reg. No.

(REVISION — 2015)

Signature

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

RADAR AND NAVIGATION

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Define minimum detectable signal.
2. List the advantages and disadvantages of radar.
3. State the application of FM-CW radar.
4. State the limitations of DME.
5. List any two types of landing system.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Describe different frequencies ranges used in radar.
2. Write short notes on radar displays A scope and B scope.
3. Explain the working of tracking radar.
4. Describe the working principle of Goniometer.
5. Explain the working principle of LORAN.
6. Differentiate GPS and DGPS.
7. Briefly explain Inertial Navigation System.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Draw and explain the block diagram of radar. 8
 (b) Explain the applications of radar system. 7

OR

- IV (a) Derive radar range equation. 8
 (b) Write short notes on radar performance factors. 7

UNIT — II

- V (a) Draw and explain the block diagram of MTI Radar. 9
 (b) Explain Doppler effect in CW Radar. 6

OR

- VI (a) Explain the block diagram of FM CW Radar. 8
 (b) Draw and explain the block diagram of MTI signal processor. 7

UNIT — III

- VII (a) Explain the working principle of OMEGA and DECCA hyperbolic navigation systems. 10
 (b) Describe the working principle of loop antenna. 5

OR

- VIII (a) Write short notes on DME & VOR. 7
 (b) Describe the four methods of navigation. 8

UNIT — IV

- IX (a) Explain instrument landing system. 7
 (b) Write short notes on GALILEO, COMPASS, IRNSS, QZSS. 8

OR

- X (a) Briefly explain Microwave Landing System. 8
 (b) Explain the significance of Glide Slope and Markers. 7
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