

# CBCS SCHEME

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18AE/AS743

Seventh Semester B.E. Degree Examination, June/July 2024

## Guidance, Navigation and Control

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Write a short note on Guidance, Navigation and Control along with relevant block diagram. (10 Marks)
- b. Explain the working of Pulse Doppler RADAR. Also write its applications? (10 Marks)

OR

- 2 a. Write a note on Air data information for navigation. (10 Marks)
- b. Explain the working of MTI along with limitation of MTI performance. (10 Marks)

### Module-2

- 3 a. Explain the working of sequential lobing along with its advantage. (10 Marks)
- b. Explain how GPS works along with its limitation. (10 Marks)

OR

- 4 a. Explain the working of Monopulse Tracking. (10 Marks)
- b. Explain the working of stepdown navigation. (10 Marks)

### Module-3

- 5 a. Write the difference between open and close loop system. (05 Marks)
- b. Derive moment equation for controlling aerodynamics of Missile along with relevant diagram. (15 Marks)

OR

- 6 Draw and explain block diagram of missile autopilot. (20 Marks)

### Module-4

- 7 Explain the working of proportional navigation guidance along with its block diagram. (20 Marks)

OR

- 8 a. Write the comparison of guidance system performance. (10 Marks)
- b. Explain the working of Bank to turn missile guidance along with block diagram of acceleration control system for BTT missile. (10 Marks)

### Module-5

- 9 Draw and explain director fire control system block diagram. (20 Marks)

OR

- 10 Draw and explain Lateral flight control system block diagram. (20 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42-8 = 50, will be treated as malpractice.