

# CBCS SCHEME

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15AE754

## Seventh Semester B.E. Degree Examination, Jan./Feb. 2021 Guidance, Navigation and Control

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. Define Guidance, Navigation and Control. (03 Marks)  
b. Describe the working of radar. (09 Marks)  
c. What are the limitations of MTI performance? (04 Marks)

OR

- 2 a. Define Geoid surface. (02 Marks)  
b. Explain MTI. (07 Marks)  
c. Describe Pulse Doppler Radar. (07 Marks)

### Module-2

- 3 a. Describe Mono Pulse Tracking. (05 Marks)  
b. Describe Automatic tracking with surveillance radar. (05 Marks)  
c. What is GPS? Describe. (06 Marks)

OR

- 4 a. Describe Conical Scanning and Sequential Lobbing. (06 Marks)  
b. Describe Surveillance Radar. (04 Marks)  
c. Explain, what is INS? (06 Marks)

### Module-3

- 5 a. Describe with a neat sketch, open loop and closed loop transfer function and the advantage of closed loop system. (06 Marks)  
b. Describe Missile Autopilot. (10 Marks)

OR

- 6 a. Describe roll stabilization of a missile. (08 Marks)  
b. Explain acceleration command. (08 Marks)

### Module-4

- 7 a. What is Prepositional Navigation Guidance? (08 Marks)  
b. Explain Velocity Pursuit. (08 Marks)

OR

- 8 a. What is command line-of-sight? (12 Marks)  
b. Explain Bank to turn missile guidance. (04 Marks)

### Module-5

- 9 a. What is aircraft fire control system? (08 Marks)  
b. Describe Lateral Control System of a missile. (08 Marks)

OR

- 10 a. Explain any two of the Tracking control laws. (08 Marks)  
b. Rate of change of Euler angle in missile control (08 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.