Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Aerospace Engg.) (EL-2012 Batch) (Sem.–7,8)

GUIDANCE AND NAVIGATION

Subject Code : ASPE-408

M.Code : 72571

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Answer briefly :

(a) List various functions of GPS.

(b) How do you get air data information?

(c) What do you understand by 'basic altitude reference'?

(d) Define 'Roll Stabilization'.

(e) List various uses of radar.

(f) Define Transfer function. Write expression for transfer function of anopen loop system.

(g) Define Doppler Effect.

(h) What do you mean by 'missile parameters'?

(i) Define 'Conical Scan'.

(j) Define 'Proportional Navigation Guidance'.

SECTION-B

2. Explain briefly various tracking control laws.

3. Explain briefly missile autopilot schematics with the help of diagram(s).

4. Distinguish between open and closed loop system with the help of diagrams.

5. What do you understand by 'Mono pulse tracking'? Explain its importance in guidance.

6. Explain the working principle of 'Longitudinal flight control system'.

SECTION-C

7. Write notes on the following :

   (a) Satellite navigation

   (b) Director fire control system

8. Distinguish between Inertial guidance and Laser based guidance. Explain their working principles.

9. Write notes on the following :

   (a) MTI and its limitations

   (b) Tracking control laws

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.