CBCS SCHEME

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15AE754

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Guidance Navigation and Control

Time: 3 hrs. Max. Marks: 80

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

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.

Module-1

1 a. What is Navigation? Briefly explain the different parameters used for Navigation. **(10 Marks)**
b. Briefly explain the different techniques used for Aircraft navigation. **(06 Marks)**

OR

2 a. With a neat diagram, explain the working principle of radar. **(06 Marks)**
b. Write short notes on :
(i) Limitations of MTI performance (ii) Pulse Doppler Radar. **(10 Marks)**

Module-2

3 a. Explain Monopulse tracking with a neat diagram. **(08 Marks)**
b. With a neat sketch Describe conical scan tracking system. **(08 Marks)**

OR

4 a. What are the impacts of image based navigation? **(06 Marks)**
b. Discuss the different satellite based navigation used today. **(06 Marks)**
c. What are different sensors used in Inertial Navigation? **(04 Marks)**

Module-3

5 a. Explain the roll stabilization techniques with a neat diagram. **(08 Marks)**
b. What are the functions of automatic flight control system? **(08 Marks)**

OR

6 a. Differentiate open loop and closed loop system. **(08 Marks)**
b. Briefly explain movable gun system with a neat diagram. **(08 Marks)**

Module-4

7 a. Write short notes on :
i) Proportional Navigation Guidance
ii) Command Guidance. **(12 Marks)**
b. Elaborate the missile guidance process. **(04 Marks)**

OR

8 a. Explain missile guidance system model with a help of a block diagram. **(06 Marks)**
b. Compare the different guidance system performance in detail. **(10 Marks)**

Module-5

9 a. Discuss Director Fire control system with a neat diagram. **(10 Marks)**
b. How Tracking Control Laws (TCL) is used in the integration of subsystem. **(06 Marks)**

OR

10 a. Explain Longitudinal flight control system and Lateral flight control system in detail. **(12 Marks)**
b. Write short notes on autopilot. **(04 Marks)**

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