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10AE831

Eighth Semester B.E. Degree Examination, Aug./Sept. 2020
Flight Testing

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. Define purpose and scope of flight testing. **(03 Marks)**
b. Explain weighing and ballasting techniques in flight test. **(07 Marks)**
c. Define an error and explain any four error in flight test data. **(10 Marks)**

2 a. Describe sensing and transuding techniques. **(10 Marks)**
b. Define Radio telemetry and draw wireless telemetry system. **(10 Marks)**

3 a. Explain Level flight performance theory for Jet aircraft. **(12 Marks)**
b. Derive an equation for rate of climb by considering acceleration factor using vector approach method. **(08 Marks)**

4 a. Explain the four primary limitations on the turning performance of an airplane. **(12 Marks)**
b. Explain test procedures for takeoff and landing of a aircraft in flight test. **(08 Marks)**

PART – B

5 a. Draw and explain flight path stability curve in static longitudinal stability test. **(10 Marks)**
b. Write procedure for evaluating the phugold in flight test method and data reduction. **(10 Marks)**

6 a. Explain directional stability in detail. **(10 Marks)**
b. Explain effects of wing sweep on lateral stability. **(05 Marks)**
c. Write short notes on spiral mode. **(05 Marks)**

7 a. Draw the Cooper – Harper pilot rating scale. **(12 Marks)**
b. Define the three levels of flying qualities and also define pilot workload. **(08 Marks)**

8 a. Define airplane spin and its type. Also explain spin recovery parachutes. **(12 Marks)**
b. Write short notes on :
i) Control reversal
ii) Flutter. **(08 Marks)**

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