

USN

Eighth Semester B.E. Degree Examination, July/August 2021
Flight Testing

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Briefly explain the purpose and scope of flight testing, mentioning types of flight testing. (10 Marks)
b. Explain the sources of error related to flight testing and Techniques for minimizing them. (10 Marks)
- 2 a. Explain system planning in flight test instrumentation. (06 Marks)
b. Briefly describe the instruments used for measuring pressure and temperature in flight testing. (14 Marks)
- 3 a. Briefly explain the methods for in flight calibration of airspeed. (10 Marks)
b. Explain the climb performance test methods and data reduction techniques. (10 Marks)
- 4 Explain the methods for determination of drag in flight including the advantages and disadvantages of each method. (20 Marks)
- 5 Explain stick free static longitudinal stability and give the effect of aft mounted engines (or) propellers. (20 Marks)
- 6 a. Explain maneuvering, stability with respect to constant "g" method. (10 Marks)
b. Methods of improving Lateral stability through tabs and aerodynamics balance. (10 Marks)
- 7 a. Explain what do you understand by flying qualities of cooper harper pilot testing. (10 Marks)
b. Explain in detail MIL and FAR Regulations for flying qualities. (10 Marks)
- 8 a. Explain the flight test method for stall testing and the data requirement. (08 Marks)
b. Explain the effect of various airframe components is spin keeping the phases of spin in view. (12 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.