

CBCS SCHEME

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18AE824

Eighth Semester B.E. Degree Examination, June/July 2023 Flight Testing

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. List the pressure and temperature sensing device used in Flight testing. Explain. (10 Marks)
b. Define Flight Testing. Give the purpose and scope of Flight testing. (10 Marks)

OR

- 2 a. Explain the technique for minimizing the error related to Flight testing. (10 Marks)
b. Explain the following : i) Radio telemetry ii) Data Acquisition system. (10 Marks)

Module-2

- 3 a. Write a note on :
i) Constant speed propeller ii) Fixed pitch propeller. (10 Marks)
b. Derive the endurance equation of Propeller driven and Jet aircraft. (10 Marks)

OR

- 4 a. Write a note on Test methods used for take off and landing tests. (10 Marks)
b. Derive the expression for take off ground run. (10 Marks)

Module-3

- 5 a. Explain the Flight test methods determining neutral point. (10 Marks)
b. Brief about the flight path stability and speed stability. (10 Marks)

OR

- 6 a. Explain the Flight test method determining quantitative evaluation. (10 Marks)
b. Brief about the technique used to test Airplane short periods. (10 Marks)

Module-4

- 7 a. Explain Steady heading sideslip method for determining lateral directional static stability. (10 Marks)
b. Describe Dutch roll, Dutch roll technique and Dutch roll data reduction. (10 Marks)

OR

- 8 a. Explain Flight test method for evaluating dynamic lateral directions stability. (10 Marks)
b. Describe the methods of improving longitudinal stability through tabs and aerodynamic balance. (10 Marks)

Module-5

- 9 a. Explain the Cooper – Harper Pilot rating scale for handling qualities of Aircraft. (10 Marks)
b. Explain Flutter , Vibration and Buffet in drive testing. (10 Marks)

OR

- 10 a. Explain the effects of various Airframe components on Spin. (10 Marks)
b. Explain Spin build up and Spin recovery techniques. (10 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.