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Seventh Semester B.E. Degree Examination, Dec.2014/Jan.2015
Gas Turbine Technology

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART - A

- 1 a. With a neat sketch, explain the working of a Turbojet engine stating the energy distribution in it. (10 Marks)
 b. Compare thrust and specific fuel consumption in Aircraft Engine. (04 Marks)
 c. With a neat graph explain variation of Thrust against velocity of Aircraft (Mach No.) (06 Marks)
- 2 a. List three types of burner systems. Give the advantages and disadvantages of each type. (10 Marks)
 b. List the types of Thrust reversal systems. What is the principle and uses? (06 Marks)
 c. What is after burner and its use? (04 Marks)
- 3 a. Briefly explain some commonly used terms and characterization considered in the selection of materials in the Gas turbine engine of Aircraft. (10 Marks)
 b. Write a short notes on use of composites and ceramics in different parts of Aircraft Engine as well as in Airframes. (10 Marks)
- 4 a. Explain the interface of FADEC on an Aircraft Jet Engine. (10 Marks)
 b. List the various gas turbine starters and explain any one starter. (10 Marks)

PART - B

- 5 a. What is Windmilling? Explain the turbojet windmilling process. (12 Marks)
 b. Explain the concept of inflight restart envelope of a turbo fan engine. (08 Marks)
- 6 a. Draw and explain the compressor map of axial flow compressor. (10 Marks)
 b. Explain any two tests to which a jet engine combustor will be subjected during its performance evaluation. (10 Marks)
- 7 a. With a neat sketch, explain outdoor sea level thrust test bed. (10 Marks)
 b. Explain briefly durability tests in Aircraft engine. (10 Marks)
- 8 a. Write short notes on Testing is done in a Test cell to measure the following operating parameters in Aircraft engine: (12 Marks)
 i) Temperature ii) Pressure. (08 Marks)
 b. Briefly discuss the Mass and CUSUM plots.

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.

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