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10AE74

Seventh Semester B.E. Degree Examination, Dec.2019/Jan.2020
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. What are the characteristics and applications of turbojet and turbofan engines? **(12 Marks)**
b. Describe the energy distribution of turboprop engine. **(08 Marks)**

2 a. Explain the effect of operating variables on burner performance. **(06 Marks)**
b. What is Thrust reversal? Explain different methods of thrust augmentation. **(14 Marks)**

3 a. Explain the characteristics to be considered in selection of material for gas turbines. **(12 Marks)**
b. What are the metal cutting operations used in production of gas turbines? Write briefly. **(08 Marks)**

4 a. Explain the starting system of a gas turbine. Write the various starters used for this purpose. **(10 Marks)**
b. Explain the oil system of a gas turbine with component details. **(10 Marks)**

PART – B

5 a. Explain the performance characteristics of a gas turbine. **(10 Marks)**
b. How performance of a single spool turbojet engine is evaluated? **(10 Marks)**

6 a. What is a Compressor MAP? What results can be obtained from it? **(10 Marks)**
b. Explain the turbine testing and performance evaluation. **(10 Marks)**

7 a. Explain i) Open air test bed ii) Flying test bed. **(10 Marks)**
b. Explain the ground testing of engine installed in aircrafts. **(10 Marks)**

8 a. Mention and explain factors for design of engine test beds. **(08 Marks)**
b. Write briefly the instruments used in test cell for measurements. **(12 Marks)**

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