

USN

--	--	--	--	--	--	--	--	--	--	--

10AE74

Seventh Semester B.E. Degree Examination, June/July 2017

Gas Turbine Technology

Time: 3 hrs.

Max. Marks: 100

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

PART – A

- 1 a. Draw the thrust, pressure and velocity diagram of a turbofan engine and explain the variations of the parameters across the engine. (10 Marks)
b. Draw the neat sketch of a turbo prop engine, mark the parts and explain how the propeller gets the drive. (10 Marks)
- 2 a. What are the different types of combustion chambers used in airplane engine? Explain their merits and demerits. (08 Marks)
b. What are the types of thrust reversers used in civil airplanes? Describe their operation. (06 Marks)
c. Describe the compressors used in engine. Describe their working principle. (06 Marks)
- 3 a. What are the coating given to the turbine blades? (06 Marks)
b. What are the advantages of a shrouded turbine blade? (06 Marks)
c. Describe the exhaust system of a jet engine. (08 Marks)
- 4 a. What is compressor wash? How is it done? (06 Marks)
b. Short notes on:
i) Fuel specification of jet engine (08 Marks)
ii) Starting system of jet engine (06 Marks)
c. Draw a simplified block diagram of an EEC (any make).

PART – B

- 5 a. What is compress surge? (06 Marks)
b. What is meant by transient performance? (08 Marks)
c. What are the parameters monitored for engine performance monitoring? (06 Marks)
- 6 a. What is compressor MAP? (08 Marks)
b. Pressure recovery at inlet. Describe. (06 Marks)
c. What is the need for a nozzle in a turbine engine? (06 Marks)
- 7 a. Explain Life Assessment Tests. (06 Marks)
b. Describe environmental ingestion tests on engine. (08 Marks)
c. Describe Altitude test facility. (06 Marks)
- 8 a. Explain Engine test bed calibration. (10 Marks)
b. List and explain how the parameters are measured in a test bed. (10 Marks)

* * * * *

1. Do not write answers in the spaces provided. 2. Do not use pencil for drawing. 3. Do not use correction fluid. 4. Do not use eraser. 5. Do not use white out. 6. Do not use any other material. 7. Do not use any other material. 8. Do not use any other material. 9. Do not use any other material. 10. Do not use any other material. 11. Do not use any other material. 12. Do not use any other material. 13. Do not use any other material. 14. Do not use any other material. 15. Do not use any other material. 16. Do not use any other material. 17. Do not use any other material. 18. Do not use any other material. 19. Do not use any other material. 20. Do not use any other material. 21. Do not use any other material. 22. Do not use any other material. 23. Do not use any other material. 24. Do not use any other material. 25. Do not use any other material. 26. Do not use any other material. 27. Do not use any other material. 28. Do not use any other material. 29. Do not use any other material. 30. Do not use any other material. 31. Do not use any other material. 32. Do not use any other material. 33. Do not use any other material. 34. Do not use any other material. 35. Do not use any other material. 36. Do not use any other material. 37. Do not use any other material. 38. Do not use any other material. 39. Do not use any other material. 40. Do not use any other material. 41. Do not use any other material. 42. Do not use any other material. 43. Do not use any other material. 44. Do not use any other material. 45. Do not use any other material. 46. Do not use any other material. 47. Do not use any other material. 48. Do not use any other material. 49. Do not use any other material. 50. Do not use any other material. 51. Do not use any other material. 52. Do not use any other material. 53. Do not use any other material. 54. Do not use any other material. 55. Do not use any other material. 56. Do not use any other material. 57. Do not use any other material. 58. Do not use any other material. 59. Do not use any other material. 60. Do not use any other material. 61. Do not use any other material. 62. Do not use any other material. 63. Do not use any other material. 64. Do not use any other material. 65. Do not use any other material. 66. Do not use any other material. 67. Do not use any other material. 68. Do not use any other material. 69. Do not use any other material. 70. Do not use any other material. 71. Do not use any other material. 72. Do not use any other material. 73. Do not use any other material. 74. Do not use any other material. 75. Do not use any other material. 76. Do not use any other material. 77. Do not use any other material. 78. Do not use any other material. 79. Do not use any other material. 80. Do not use any other material. 81. Do not use any other material. 82. Do not use any other material. 83. Do not use any other material. 84. Do not use any other material. 85. Do not use any other material. 86. Do not use any other material. 87. Do not use any other material. 88. Do not use any other material. 89. Do not use any other material. 90. Do not use any other material. 91. Do not use any other material. 92. Do not use any other material. 93. Do not use any other material. 94. Do not use any other material. 95. Do not use any other material. 96. Do not use any other material. 97. Do not use any other material. 98. Do not use any other material. 99. Do not use any other material. 100. Do not use any other material.