SECTION-D

Note: Long answer type questions. Attempt any three questions out of four questions. 3x10=30

Q.33 Draw a neat labeled Brayton cycle and explain the working of an engine on its basis by assigning processes to different components.

Q.34 What are the types of combustion chambers? Describe the working of all the types of combustion chambers used in gas turbine engines. Discuss the requirement of primary, secondary and tertiary air.

Q.35 Describe the basic theory of propulsion and find the propulsive efficiency expression? What is the ratio of inlet to exit velocity for best efficiency?

Q.36 Write note on the following
a) Bye pass ratio.
b) Engine starting system.
c) Inlet Guide vanes.
d) Cooling of turbine blades.

No. of Printed Pages : 4
Roll No. .....

147754

5th Sem. / AME

Subject : Turbo propeller and Turbo Jet engine - 1

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Objective type questions. All questions are compulsory (10x1=10)

Q.1 Most important component of turbo engines is _____?

Q.2 The bye pass air meets the hot gas at _____?

Q.3 Propeller is fitted on which engines?

Q.4 Noise of turbofan/turbojet is more.

Q.5 Compressor is driven by _____.

Q.6 Name the compressors used in aircraft engines.

Q.7 After the combustion chamber the hot gas goes to _____.

Q.8 Where the bleed air is used?

Q.9 What is the material of turbine blades?

Q.10 What is the source of thrust in turbo-prop engine?

SECTION-B

Note: Very short answer type questions. Attempt any ten questions out of twelve questions. 10x2=20

Q.11 Which engine is used in fighter airplanes and why?

Q.12 Define Braton cycle?

Q.13 What do you mean by secondary and tertiary air in a combustion chamber?

Q.14 How the bearings are sealed?

Q.15 State the different types of compressors used in aircraft engines?

Q.16 What do you mean by isentropic process?

Q.17 Name the various types of combustion chambers used in gas turbine engine?

Q.18 What are different methods of fixing compressor blades?

Q.19 What do you mean by a bleed air, where it is used?

Q.20 What are the required properties of turbine blade materials?

Q.21 What is the need of turbine blade cooling?

Q.22 Where the reduction gear is used?

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. 8x5=40

Q.23 Compare centrifugal and axial flow compressor used in gas turbine engines.

Q.24 Explain briefly the different thermodynamic process in a Brayton cycle.

Q.25 What is the basic difference between a piston and turbine engine?

Q.26 Explain briefly the function major components of a turbo engine?

Q.27 Derive expression for the stage pressure ratio in axial flow compressor.

Q.28 What is the effect of speed on the efficiency of a jet engine?

Q.29 Draw a sketch of the accessory gear section.

Q.30 Draw pressure variation along the length of a turbojet engine of an airplane?

Q.31 Explain reduction gear system? Why is it required?

Q.32 What are the materials used in various parts of the turbine engine?