

- Q.26 How the sealing of gears is done?
- Q.27 What should be the best exhaust temperature in a jet engine?
- Q.28 What is the purpose of cooling Turbine Blades?
- Q.29 Where is propeller engine preferred over jet engine?
- Q.30 What is the use of bleed air ?
- Q.31 What are the different types of compressors?
- Q.32 Write about the thrust of fan in a turbofan.
- Q.33 What are the materials of engine parts?
- Q.34 What are various types of combustion chambers?
- Q.35 Which are the parts of turbine engine working as diffusers.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Describe the air system of turbine engine. Explain how blade cooling is done.
- Q.37 Explain the functioning of centrifugal compressor type with velocity diagrams.
- Q.38 Explain in detail the various type of materials used in Aircraft Engine parts and the latest development of the materials.

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5th Sem / Branch : AME
Subject:- Turbo Propeller and Turbo Jet Engine-I

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Vanless space occurs in?
- Centrifugal compressor
 - Axial compressor
 - Axial turbine
 - None of the above
- Q.2 Which of the following is true for combustion chambers with large volume and diameter?
- Higher heat transfer rates to the walls
 - Smaller total area exposed to the heat
 - Thinner walls
 - Lower wall temperature
- Q.3 What is a free turbine?
- Turbine which drive the compressor
 - Turbine which drives the propeller
 - Free not to produce power
 - Provides power for the internal systems

- Q.4 What is the old thumb rule to design a propeller?

 - a) Keep it as long as possible
 - b) Keep it as short as possible
 - c) Keep it as short and wide as possible
 - d) Keep it as half of diameter always

Q.5 Supercharger is used to improve _____

 - a) intake manifold pressure
 - b) outlet pressure
 - c) to increase charging capacity of an electric charger
 - d) expansion of exhaust velocity

Q.6 What can be the overall air fuel ratio in a turbojet engine?

 - a) 15
 - b) 1
 - c) 20
 - d) 60

Q.7 In a turbojet engine, the maximum temperature occurs at?

 - a) Compressor Inlet
 - b) Turbine inlet
 - c) Exhaust
 - d) Combustion chamber inlet

Q.8 Jet engine works on _____ Brayton cycle.

 - a) Closed
 - b) Complete
 - c) Open
 - d) None of the above

Q.9 Magnesium _____ fuel efficiency

 - a) maintains
 - b) reduces
 - c) improves
 - d) does not affect

Q.10 Free vortex flow occurs in

 - a) Inlet
 - b) Vanless space in centrifugal compressor
 - c) Axial flow compressor
 - d) Impeller

SECTION-B

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

- Q.11 What is the thermodynamic cycle for gas turbine engines?
 - Q.12 What is by-pass air?
 - Q.13 What is the material of turbine blades?
 - Q.14 Why is cooling needed in turbine engines?
 - Q.15 Name the various jet engines.
 - Q.16 The combustion in the combustion chamber takes place at _____.
 - Q.17 What is the role of gearbox in an aircraft engine?
 - Q.18 Where Turboshaft engine is used?
 - Q.19 What do you mean by rotating stall?
 - Q.20 What are the demerits of Pistonprop Engines?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Draw a reheat cycle.
 - Q.22 What is the difference between a turbojet and turbofan engine?
 - Q.23 Draw the velocity profile in a stage of axial flow compressor.
 - Q.24 What is the purpose of secondary and tertiary air?
 - Q.25 How does reduction gear system work?