

- What is the function of connecting rod in an I.C. engine?
- What is valve timing diagram?
- What is stoichiometric air fuel ratio?
- Define polytropic efficiency.
- Define surging.
- Define slip factor.
- Define fore body drag.
- What is normal shock wave?
- Define inlet mass flow ratio.
- How much thrust is increased by using an afterburner?

SECTION-B

2. Describe the working of a two stroke petrol engine.
3. Explain the working of a brayton cycle and derive the work input relationship.
4. Explain the working of a typical combustion chamber for a jet engine.
5. Describe the following with reference to nozzle :
 - a) Over expanded and under expanded nozzles.
 - b) Thrust reversal.
6. Describe the working of a centrifugal compressor and find the expression for work done and pressure rise.

SECTION-C

7. Write any one method of nozzle design with the help of neat figures.
8. Describe the working of a internal compression supersonic inlet. What is Buzz?
9. A ten stage axial flow compressor provides a total head pressure ratio of 5 : 1 with an overall total head isentropic of 87% when the inlet total head temperature is 288°K. The work is divided equally between the stages and work done factor is 0.85. Find air angles of a stage at the design radius where the blade speed is 215 m/sec. Assume the axial velocity as constant throughout the stage at 167 m/s and degree of reaction is 80%.

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