



AIRCRAFT PROPULSION

HAL
Exam

P1.) Which of following is/are true in a combustion chamber of a simple gas turbine engine?

A.) change in temperature is very large.

B.) Pressure is almost constant.

C.) Compressibility is negligible.

D.) All of the above.

P2.) It is given that 50 kg/sec of air at T_1 is isentropically compressed from 1 to 12 atm. Assuming a calorically perfect gas and $\gamma = 1.4$, the compressor's input power is approximately

A.) $10 T_1 (1 - 12^{-0.28})$

B.) $50 T_1 (1 - 12^{-0.28})$

C.) $100 T_1 (1 - 2^{-0.28})$

D.) $25 T_1 (1 - 12^{-0.28})$

P3) How many isentropic processes are there in an ideal Brayton cycle?

A) 0

B) 1

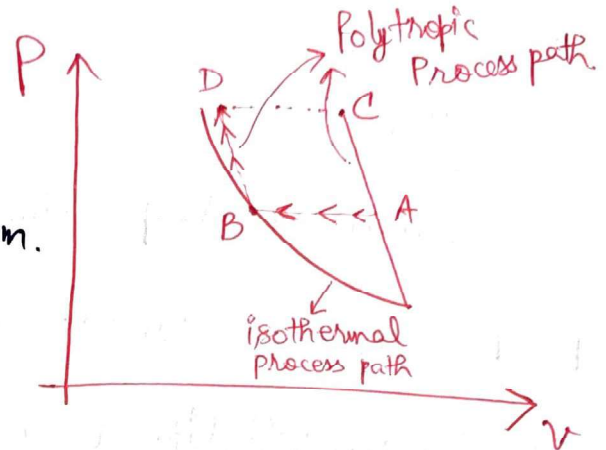
C) 2

D) 4

P4) Compression processes 1-D and 1-C are depicted on a P-v diagram.

The corresponding paths are 1-A-B-D and

1-A-C, respectively. Which of the following requires less work to compress the air from pressure $p = p_1$ to $p = p_c = p_D$



A) 1-A-B-D

B) 1-A-C

C) Both require same work.

D) None of the above

P5) choose the material for fan blade containment in a turbofan engine.

A) Kevlar

B) Titanium shroud

C) Nickel

D) A) & C)

E) A) & B)