

SBOA school & Junior college, Chennai-101

Std XI

Assignment no.

subject: physics

Topic: Thermodynamics

- ① State the first law of thermodynamics. When is the heat supplied to a system equal to the increase in its internal energy?
- ② Why does air pressure in a car tyre increase during driving?
- ③ What is the specific heat of a gas in an isothermal process? Explain.
- ④ 400 J of work is done on a gas to reduce its volume by compression adiabatically. What is the change in internal energy of the gas?
- ⑤ Explain why it is impossible to design a heat engine with 100% efficiency?
- ⑥ Can a kitchen be cooled by leaving the door of an electric refrigerator open? Explain.
- ⑦ A thermos flask contains coffee. It is vigorously shaken. Consider the coffee as the system.
 - (i) Has any heat been added to it?
 - (ii) Has any work been done on it?
 - (iii) Has its internal energy changed?
 - (iv) Does its temperature rise?

Explain your answer.