

## XI Physics Worksheet

Time: 30 min

### Chapter#12: Thermodynamics-02

Full Marks: 20

#### Instructions:

1. All questions are compulsory.

2. Please give the explanation for the answer where applicable.

Q1 - Which thermodynamic variable is defined by (a) Zeroth law of thermodynamics (b) First law of thermodynamics?

(1 Mark)

Q2 - An ideal gas is compressed at a constant temperature, will its internal energy increase or decrease?

(1 Mark)

Q3 - Can whole of heat be converted into work?

(1 Mark)

Q4 - What is zeroth law of thermodynamics?

(2 Marks)

Q5 - What is internal energy of a system?

(2 Marks)

Q6 - What is Clausius statement of second law of thermodynamics?

(2 Marks)

Q7 - State first law of thermodynamics.

(3 Marks)

Q8 - Explain why two bodies at different temperatures  $T_1$  and  $T_2$ , if brought in thermal contact do not necessarily settle to the mean temperature  $(T_1 + T_2) / 2$  ?

(3 Marks)

Q9 - A sample of ideal gas ( $\gamma = 1.4$ ) is heated at constant pressure. If an amount of 140 J of heat is supplied to the gas, find (a) change in internal energy of the gas (b) work done by the gas?

(5 Marks)