PRN:		Course Code :	UEV305

Second Year **B. Tech** End Semester Examination Winter 2023

Thermo & Aero Dynamics

Day and Date: Thursday, 07/12/2023 Max Marks: **100**

Time : 10.30 am to 1.30 PM Duration: **03** hrs

Instructions: All questions are compulsory.
Sub question 'a)' is compulsory; solve any two from the remaining

		Marks	Bloom's Level	CO
Q.1	Attempt the following			
a)	Explain following thermodynamic system open, close and isolated system	06	02	CO1
b)	Explain zeroth law of thermodynamics and concept of temperature	07	01	CO1
c)	Derive steady flow energy equation	07	03	CO1
d)	Explain Joules experiments and give outcome of Joules experiments	07	03	CO1
Q.2	Attempt the following			
a)	A cycle comprises of three processes The energy transfer in each process are tabulated below	06	03	CO1

Process	Q(kJ)	W (kJ)	ΔU (kJ)
1-2	+50	+30	-
2-3	-	-40	+30
3-1	-	-	-

If the cycle rejects 30kJ of heat complete the table.

b)	Explain Heat engine, Refrigerator and Heat pump	07	02	CO1
c)	With the help of suitable example, state second law of thermodynamics.	07	01	CO1
d)	Explain Carnot cycle and represent it on P-V and T-S diagram	07	01	CO1
Q.3	Attempt the following			
a)	Explain window air conditioner	06	01	CO2
b)	Define the following,	07	01	CO2

1. Relative humidity

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