Name: Student University Roll No.:	Printed Pages:1
School of Engineering First Sessional Examination, Even Semester (AS: 2022-23) B. Tech: CS11 to CS18 Year:1 Semester:2	
Course Title: Basic Mechanical Engineering Course Code: BME3202	Max Marks: 30 Time: 1 *hr*

Instructions if any: Read the question Carefully.

	SECTION 'A' Q.N.1. Attempt all parts of the following:	Course Objective	Marks
a)	Define Zeroth law of thermodynamics.	CO1	1
b)	Define Quasi-static process.	CO1	1
c)	Prove that for W=0 for constant volume process.	CO2	1
d)	Define intensive property with example.	CO1	1
e)	Define extensive property with example.	CO1	1

	SECTION 'B' Q.N.2. Attempt any two parts of the following:	Course Objective	Marks
a)	Define thermodynamics. Differentiate between open system, closed system and isolated system.	CO1	7.5
b)	State the first law of thermodynamics applied to cyclic process and non-cyclic process.	CO2	7.5
c)	A perfect gas at a pressure of 750 KPa and 600 K is expanded to 2 bar. Determine final temperature of the gas is the initial and final volume are 0.2 m^3 and 0.5 m^3 respectively.	CO1	7.5
d)	Explain the difference between path function and point function.	CO1	7.5

	SECTION 'C'	Course Objective	Marks
	Q.N.3. Attempt any one part of the following:		
a)	Explain what you understand by thermodynamic equilibrium.	CO1	10
b)	What do you understand by macroscopic and microscopic viewpoints?	CO1	10
c)	A cylindrical vessel of 1m diameter and 4m length has hydrogen gas at a pressure of 100 KPa and Temperature of 27°C. Determine the amount of heat to be supplied so as to increase gas pressure to 125 KPa. For hydrogen gas Take; C_p = 14.307 KJ/Kg-K and C_v = 10.183 KJ/Kg-K	CO1	10

Table 1: Mapping between COs and questions
(Number of COs may vary from course to course)

COs	Questions Numbers	Total Marks
CO1	1-a,b,d,e 2-a,c,d, 3-a,b,c	56.5
CO2	1-c, 2-b	8.5