

G II Raison College of Engineering and Management, Pune
(An Autonomous Institution affiliated to Savitribai Phule, Pune University)

Department of First Year B. Tech.

Term - II (2024-25)

CAE-II

Environmental Chemistry (23UBSL1102)

[Time: 01 Hour]

[Max. Marks-20]

Instructions to the candidates:

- 1) All questions compulsory.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.
- 5) BL – Bloom's Taxonomy Level

Q.No.	Sub Question	CO	Marks	BL
1	a) Explain the term battery. Differentiate between a primary & secondary battery	CO3	[5]	L2
	OR			
	b) Draw neat & labelled diagram of H_2 - O_2 fuel cell, along with construction, working & reactions involved.	CO3	[5]	L2
	c) Describe the construction & working of Lead-acid battery along with diagram & reactions involved.	CO3	[05]	L2
	OR			
	d) Explain the construction & working of Laclanche-Dry cell battery along with diagram & reactions involved.	CO3	[5]	L2
2	a) Describe the construction and working of Bomb calorimeter with neat diagram. Give the expression for the GCV formula using bomb calorimeter.	CO3	[5]	L2
	OR			
	b) Explain the term GCV and NCV. Give the relation between GCV & NCV. In a Boy's calorimeter, a gaseous fuel was burnt. Find the Gross calorific value from the following data Quantity of water passing through the coil 25Kg Volume of gas used 0.1m ³ at STP. Temperature of Inlet water 20 0 C Temperature of outlet water 33 0 C	CO3	[5]	L3
	c) Explain the construction and working of Biogas plant with suitable diagram. Mention any two applications and advantages.	CO3	[5]	L2
	OR			
	d) Explain the construction and working of Hydroelectric power plant with suitable diagram & give its advantage and disadvantage.	CO3	[5]	L2