BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2024)

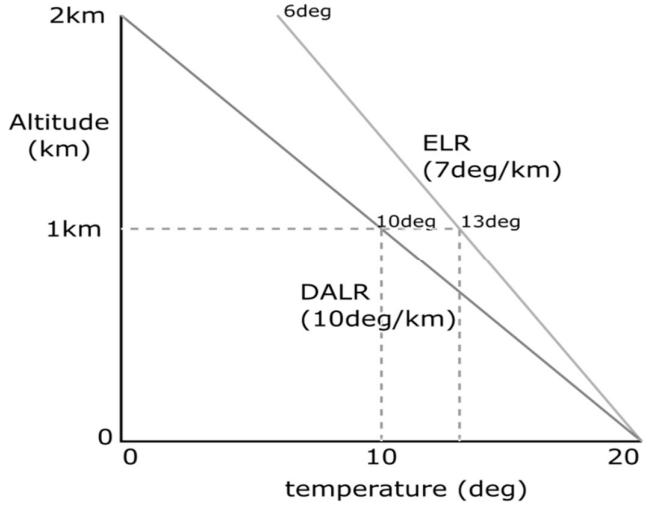
CLASS: BTECH **SEMESTER : IV**
BRANCH: CIVIL **SESSION : SP/2025**

SUBJECT: CE420 AIR POLLUTION AND CONTROL

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	Differentiate between industrial and photochemical smog.	[2]	1	2
Q.1(b)	Discuss the sources of gaseous air pollutants.	[3]	1	2
Q.2(a)	Explain the sources of radon and aldehyde in indoors causing air pollution.	[2]	1	2
Q.2(b)	Based on typical results of PM_{10} sampling by a high-volume respirable dust sampler, calculate the concentration in $\mu g/m^3$. Initial rate of flow=$1.4 m^3$/min, final flow rate=$1.2 m^3$/min, the weight of clean filter paper= 5.45 g, the weight of filter paper after 24 hours of exposure= 5.70 g.	[3]	2	3
Q.3(a)	Discuss the principle of NDIR technique for CO measurement.	[2]	1	3
Q.3(b)	Explain the importance of isokinetic sampling in stack and mention the different kinetic conditions possible during sampling.	[3]	2	2
Q.4(a)	Enlist the objectives of air pollution monitoring.	[2]	2	2
Q.4(b)	Explain the principle of Atomic absorption spectrophotometry estimation of metals.	[3]	2	2
Q.5(a)	Discuss the concept of inversion.	[2]	3	2
Q.5(b)		[3]	3	3



Explain the conditions mentioned in the above figure. Discuss what will be the fate of air parcel at height 1 km.

::::::03/03/2025::::::E