Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – V (NEW) EXAMINATION – WINTER 2015

Subject Code: 2153508 **Date:10/12/2015**

Subject Name: Environmental Management-I

Time:10:30am to 1:00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	At climate station air pressure is measured 100 KPa, air temperature as 20^0C, and dew point temperature as 16^0C. Calculate the corresponding vapour pressure, relative humidity and air density (Gas constant Ra=289 J/kg.K.)	**07**
	(b)	Calculate the perceptible water in a saturated air column 4 km high above $1m^2$ of ground surface. The surface pressure is 101.3 kPa, the surface air temperature is 30 ^{0}C, and laps rate is 6.5 ^{0}C/km. (Gas constant Ra=287 J/kg.K.)	**07**
Q.2	**(a)**	Explain limitation and working of falling film evaporator with neat figure.	**07**
	(b)	How one can calculate Fixed cost, operating cost and direct cost for multi effect evaporator.	**07**
		OR	
	(b)	Derive equation of energy balance and heat transfer for triple effect evaporator.	**07**
Q.3	**(a)**	Explain conventional ZLD technologies in textile industry	**07**
	(b)	Explain closed loop system of ZLD in pulp and paper mill with neat flow diagram.	**07**
		OR	
Q.3	**(a)**	Define following terms 1) Hybrid ZLD 2) Blue Angle Program 3) Normative standard.	**07**
	(b)	Write short Note on General Environmental Audit.	**07**
Q.4	**(a)**	Explain all steps of detail energy audit.	**07**
	(b)	How ISO 14001-2004 can be a good tool for EMS?	**07**
		OR	
Q.4	**(a)**	Write short note on Insitu treatment for Bio-Remediation.	**07**
	(b)	Describe basic mechanism of Bio-Remediation with chart.	**07**
Q.5	**(a)**	How land use pattern impact environment.	**07**
	(b)	Write steps for OHSAS 18000.	**07**
		OR	
Q.5	**(a)**	Write Note on REAch.	**07**
	(b)	How planning of environment is helpful in per and post inception economical evaluation.	**07**

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