

GUJARAT TECHNOLOGICAL UNIVERSITY**DIPLOMA ENGG.- IIIrd SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 330502****Date: 29/05/2012****Subject Name: Process Heat Transfer****Time: 02:30 pm – 05:00 pm****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) Give five applications of heat transfer.	07
	(b) Write three differences between conduction, convection and radiation.	07
Q.2	(a) State and explain Fourier's law.	07
	(b) Define : Thermal conductivity. How it varies with temperature.	07
	OR	
	(b) Explain : Double pipe heat exchanger.	07
Q.3	(a) Derive equation of heat flow in two layer cylinder.	07
	(b) Explain : 2-4 shell and tube heat exchanger.	07
	OR	
Q.3	(a) Derive equation of heat flow in three layer cylinder.	07
	(b) Explain : 1-2 shell and tube heat exchanger.	07
Q.4	(a) Explain : Plate type heat exchanger.	07
	(b) Explain : condensation.	07
	OR	
Q. 4	(a) Explain : Finned type heat exchanger.	07
	(b) Give difference between dropwise and filmwise condensation.	07
Q.5	(a) Explain : Wein's law.	07
	(b) Explain : Duhring's rule.	07
	OR	
Q.5	(a) Explain : Agitated film evaporator.	07
	(b) Explain : Forced circulation evaporator.	07
