Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – III • EXAMINATION – WINTER • 2014

Subject code: 734001 **Date: 25-11-2014**

Subject Name: Rubber Waste Utilization

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)**	Answer the following.	
	(i)	What Do you mean by Zero waste?	**(03)**
	(ii)	Write the applications of Rubber Waste Powder.	**(04)**
	(b)	Explain the various types of waste with their specification generating from Tyre.	**(07)**
Q. 2	**(a)**	Discuss in detail about ground rubber waste in Civil Engineering application.	**(07)**
	(b)	Describe the Reclaimation Technique used for Polar rubbers.	**(07)**
		OR	
	(b)	Describe the Thermal Decomposition method for scrap tyres.	**(07)**
Q. 3	**(a)**	Answer the following.	
	(i)	ñScrap tyres management is a serious global problem.ò Justify the statement.	**(04)**
	(ii)	Discuss the Renewable Resource Material (RRM) from the scrap tyres.	**(03)**
	(b)	Write the advantage of Cryogenic grinding technology over the Ambient grinding technology for rubber waste.	**(07)**
		OR	
Q. 3	**(a)**	List the methods for modification of asphalt with Reclaimed Rubber and explain any one in detail.	**(07)**
	(b)	Short note on ñfluidized bed combustion process for Rubber Waste.ò	**(07)**
Q. 4		Draw the schematic diagram of Pyrolysis process for waste rubber. Explain it in detail.	**(14)**
		OR	
Q. 4	**(a)**	Discuss any one Pyrolysis Reactor design in detail.	**(07)**
	(b)	Write about the applications of By- Products which generate from Pyrolysis plant.	**(07)**
Q. 5	**(a)**	Mention about the Risks of Rubber Waste disposal on human health & safety.	**(07)**
	(b)	What are the impacts of tyre in Energy recovery?	**(07)**
		OR	
Q. 5	**(a)**	Write the biotechnological possibilities for reclaiming of Natural Rubber. Explain in detail.	**(07)**
	(b)	Short note on ñ Incineration process for Rubber Wasteò	**(07)**

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