Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV • EXAMINATION – SUMMER 2015

Subject code: 142601 Date: 01/06/2015

Subject Name: Rubber Compounding Materials

Time: 10.30am-01.00pm 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)**	Answer the following.	**(06)**
	(i)	List the name of Ester Plasticisers.	
	(ii)	Write in brief about Graphite.	
	(iii)	While formulating a rubber compound which property should be considered? Why?	
	(b)	Compare the types of Process Oils used as Plasticisers in rubber compounding.	**(03)**
	(c)	Short note on "Delayed Action Accelerator".	**(05)**
Q. 2	**(a)**	Your company has to make a microcellular sheet of size 20"X20"X8mm.Find the manufacturing cost considering 35% expansion in mould release.	**(07)**
Q. 2	**(b)**	List the different grades of Carbon Black manufacturing by Thermal & Channel black Process .Write the properties & applications of each.	**(07)**
		OR	
	(b)	Explain the production process of Furnace Black in detail with sketch.	**(07)**
Q. 3	**(a)**	List the properties required for Accelerators. Explain all in detail.	**(05)**
	(b)	Define the term" Blowing Agents". Write about Azo Dicarbon Amide & Diamino Benzene used as a blowing agent.	**(05)**
	(c)	Write about Abrasives & Antistatic agents.	**(04)**
		OR	
Q. 3	**(a)**	Short note on "Retarders".	**(05)**
	(b)	Short Note on "Textiles, Steel & glass Fibre used as reinforcing agent."	**(09)**
Q. 4	**(a)**	What do you mean by Ageing? Discuss the factors affecting Ageing.	**(07)**
	(b)	Short note on Organic Pigments.	**(07)**
		OR	
Q. 4	**(a)**	Discuss in detail about desirable properties of Antioxidants.	**(07)**
	(b)	Write about the White & Blue Inorganic Pigments.	**(07)**
Q. 5	**(a)**	Explain in detail about Reinforcement Concept.	**(08)**
	(b)	Write in detail about Peptisers.	**(06)**
		OR	
Q. 5	**(a)**	Write in detail about Phenolic Resins.	**(05)**
	(c)	Short Note on "Extenders".	**(09)**

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