Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV (NEW) EXAMINATION – SUMMER 2015.

Subject code: 2142601 **Date:01/05/2015**

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)	**Write the difference between Paraffinic Oil & Aromatic Oil.**	
	(ii)	**Define the term " Activator". List the name of Activators.**	
	(iii)	**Write the function of Peptisers.**	
	(b)	**Define the term " Extenders." List the name of extenders. Discuss about any one in detail.**	**(08)**
Q. 2	**(a)**	**Define the term " Filler." Write the properties of Filler. Give the difference between Reinforcing fillers & Inert Filler.**	**(07)**
Q. 2	**(b)**	**List the different grades of Carbon Black. Write any three in detail.**	**(07)**
		OR	
	(b)	**Describe in detail about manufacturing of Carbon Black by Furnace process with labeled diagram.**	**(07)**
Q. 3	**(a)**	**Short note on " Accelerators for Chloroprene & Butyl Rubber."**	**(06)**
	(b)	**Discuss in detail about Benzene Sulphonyl Hydrazide & Diazoamino Benzene Blowing Agents.**	**(04)**
	(c)	**Write in detail about the Flame Retardants & Abrasives as Special purpose additives.**	**(04)**
		OR	
Q. 3	**(a)**	**Write in detail about Retarders.**	**(05)**
	(b)	**Which materials are used as reinforcing agents for Rubber products? Write about any one in detail.**	**(05)**
	(c)	**Define the term " Blowing Agent."How many types of blowing agents are available in industry? Which type of blowing agent is widely used in Rubber Industry?**	**(04)**
Q. 4	**(a)**	**What do you mean by Ageing? Discuss the factors affecting Ageing.**	**(07)**
	(b)	**Write in detail about Organic Pigments.**	**(07)**

-------P.T.O-------

		OR	
Q. 4	**(a)**	**Discuss in detail about Desirable Properties of Antioxidants.**	**(07)**

	(b)	**Write about the White & Yellow Inorganic Pigments.**	**(07)**
Q. 5	**(a)**	**List the name of Organic Fillers. Write in detail about any three.**	**(07)**
	(b)	**Short Note on "Calcium Carbonate."**	**(07)**

OR

Q. 5	**(a)**	**Explain in detail about "Reinforcement Concept."**	**(08)**
	(b)	**Your company receives an order of 6 Lakh piece of Rubber Suspension Bush to be supplied annually to a Car manufacturing company. The weight of a Rubber Suspension Bush is 60 gram. You are asked (1) To give the cost of one Bush to your boss. (2) To record type of Press & its Steam requirement.**	**(06)**

*****