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Subject Code: 142601

Enrolment No.____

Date: 07-06-2013

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV • EXAMINATION - SUMMER 2013

Subject Name: Rubber Compounding Materials Time: 10:30am - 01:00pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 0.1 **(i)** Give the difference between golden factice and white factice. (14)Write about Titanium dioxide used as a white pigment. (ii) (iii) Give the comparison between organic and inorganic pigments. Discuss the characteristics of Coumarone resin. (iv) List the peptisers with their trade name, chemical name and their operating **(v)** temperature range. Write about different grades of Antimony Sulphide. (vi) Give the difference between Paraffinic oil and Aromatic oil. (vii) Define the term "Blowing Agent." Discuss the difference between organic and (i) Q.2(04)inorganic Blowing Agent. (a) (ii) Which blowing agent is most used in rubber industry? Write in detail about it. (03)**Q.2** List the function of Accelerator and write a short note on "Delayed action (07)**(b)** accelerator". OR List the different grades of accelerator. Write in detail about any one. 0.2 (i) (05)**(b)** (ii) List the properties of accelerator. (02)Q.3 (a) Discuss in detail about the manufacturing process of Carbon black by furnace (07)process. Define the term "Ageing". Discuss the different factors affecting ageing. **(b)** (07)OR Explain the mechanism of Oxidation. Q.3(a) (07)Which are the most important properties of Carbon black? Write about any **(b)** (07)three. **Q.4** (a) Define the term "Fillers". Write about reinforcing, inert and light fillers. (07)Short note on "Retarder". (07)**(b)** (07)Explain in detail about "Reinforcing Concept." 0.4 (a) (07)Short note on "Activators". **(b)** (07)0.5 (a) Calculate the Specific gravity of compound used for manufacturing of rubber Write about Stiffening agents and Integral bonding agents. **(b)** (07)(07)"Textiles are used as reinforcing agent." Justify the statement. **Q.5** (a) (07)Your Company has to make a microcellular sheet of size 24" x 24" x 8 mm **(b)** thickness. Find the manufacturing cost of a sheet considering 20% expansion in mould release.
