

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – SUMMER 2013****Subject Code: 142601****Date: 07-06-2013****Subject Name: Rubber Compounding Materials****Time: 10:30am – 01:00pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (i) Give the difference between golden factice and white factice. (14)
- (ii) Write about Titanium dioxide used as a white pigment.
- (iii) Give the comparison between organic and inorganic pigments.
- (iv) Discuss the characteristics of Coumarone resin.
- (v) List the peptisers with their trade name, chemical name and their operating temperature range.
- (vi) Write about different grades of Antimony Sulphide.
- (vii) Give the difference between Paraffinic oil and Aromatic oil.
- Q.2** (i) Define the term “Blowing Agent.” Discuss the difference between organic and inorganic Blowing Agent. (04)
- (a) (ii) Which blowing agent is most used in rubber industry? Write in detail about it. (03)
- Q.2** (b) List the function of Accelerator and write a short note on “Delayed action accelerator”. (07)

OR

- Q.2** (i) List the different grades of accelerator. Write in detail about any one. (05)
- (b) (ii) List the properties of accelerator. (02)
- Q.3** (a) Discuss in detail about the manufacturing process of Carbon black by furnace process. (07)
- (b) Define the term “Ageing”. Discuss the different factors affecting ageing. (07)

OR

- Q.3** (a) Explain the mechanism of Oxidation. (07)
- (b) Which are the most important properties of Carbon black? Write about any three. (07)
- Q.4** (a) Define the term “Fillers”. Write about reinforcing, inert and light fillers. (07)
- (b) Short note on “Retarder”. (07)

OR

- Q.4** (a) Explain in detail about “Reinforcing Concept.” (07)
- (b) Short note on “Activators”. (07)
- Q.5** (a) Calculate the Specific gravity of compound used for manufacturing of rubber bush. (07)
- (b) Write about Stiffening agents and Integral bonding agents. (07)

OR

- Q.5** (a) “Textiles are used as reinforcing agent.” Justify the statement. (07)
- (b) Your Company has to make a microcellular sheet of size 24” x 24” x 8 mm thickness. Find the manufacturing cost of a sheet considering 20% expansion in mould release. (07)