

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV EXAMINATION – SUMMER • 2014

Subject Code: 142601

Date: 16-06-2014

Subject Name: Rubber Compounding Materials

Time: 10:30 am - 01:00 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. **06**
 i. List the types of Softeners.
 ii. Write in brief about Barytes.
 iii. Which Points should be kept in mind while formulating a rubber compound?
 b. Compare the types of Process Oils used as Plasticisers in rubber compounding. **03**
 c. Short note on “Activators”. **05**
- Q. 2** **a.** Your company has to make a microcellular sheet of size 30”X30”X10mm. Find the manufacturing cost considering 25% expansion in mould release. **07**
- Q. 2** **b.** List the different grades of Carbon Black manufacturing by Furnace Process .Write the properties and applications of each. **07**
- OR
- b.** Explain the production process of channel 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”. State the difference between Organic and Inorganic blowing agents. **05**
 c. Write about Flame Retardants and Antistatic agents. **04**
- OR
- Q. 3** **a.** Short note on “Retarders”. **05**
 b. “Textiles are used as reinforcing agent.”Justify the statement. **05**
 c. Which blowing agent is widely used for rubber compounding? Write in detail about it. **04**
- 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 Red and Yellow 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 Silica. **04**
 b. Compare Hard Clay and Soft Clay. **03**
 c. Describe in detail about Factice used as extenders in rubber compounding. **07**
