

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2023

Subject Code:3142601

Date:07-07-2023

Subject Name:Rubber Compounding Materials

Time:10:30 AM TO 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.**
- 4. Simple and non-programmable scientific calculators are allowed.**

- Q.1** (a) Give the classification of Rubber Additives. **03**
(b) Write the different compounds of Aluminum used in rubber Industry. **04**
(c) Discuss the “Recurring themes” with suitable example. **07**
- Q.2** (a) Give the importance of Peptiser. **03**
(b) Write a brief note on Amine Antioxidant. **04**
(c) Discuss the Phenolic Antioxidants in detail. **07**
- OR**
- (c) Explain the chain Breaking reaction of antioxidants. **07**
- Q.3** (a) Give the difference between Organic blowing agent and Inorganic blowing agent. **03**
(b) Write the importance of Factice in rubber industry. **04**
(c) Explain in detail about the colors and pigments used in rubber industry. **07**
- OR**
- Q.3** (a) “Wax is preferable or not” justify the statement. **03**
(b) Give the importance of barium sulfate. **04**
(c) Discuss in detail about the different types of accelerators used in rubber industry. **07**
- Q.4** (a) List out the different types of Processing oil used in rubber industry. **03**
(b) Write a brief note on Alkanes. **04**
(c) Your company receives an order of 8 Lakh piece of hollow rubber O-ring to be supplied annually to a Car manufacturing company. The weight of a Rubber O-ring is 70 gram. Calculate (i) Specific gravity of compound (ii) Cost of one O-Ring. **07**
- OR**
- Q.4** (a) Give the different between hard clay and soft clay. **03**
(b) Write a Brief note on Phenols. **04**
(c) Discuss in detail about the special purpose additives used in rubber industry. **07**
- Q.5** (a) Define the term: (i) Mixing (ii) Compounding **03**
(b) Write a brief not on DNPT blowing agent. **04**
(c) Explain the different Grades of carbon black with its Properties and application. **07**
- OR**
- Q.5** (a) Give the different properties of Silica and give its importance. **03**
(b) Write a brief note on Azo di carbamid . **04**
(c) Explain the “Furnace black process “with flow diagram in detail. **07**
