

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2022****Subject Code:3142601****Date:23-06-2022****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 Accelerator. **03**
 (b) What do you mean by Synergism? Write the important points for the synergism. **04**
 (c) Discuss the “Recurring themes” with suitable example. **07**
- Q.2** (a) What is the difference between Golden factice and Brown factice? **03**
 (b) Explain the Autoxidation of Hydrocarbon Polymers. **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 China clay and Treated clay. **03**
 (b) Write the importance of Zinc Oxide in rubber industry. **04**
 (c) Short note on “Peroxide”. **07**
- OR**
- Q.3** (a) “Wax is preferable or not” justify the statement. **03**
 (b) Give the difference between Hydrated and Pyrogenic Silica. **04**
 (c) Discuss the compounds of Calcium carbonate. **07**
- Q.4** (a) Write the importance of Processing oil use in rubber industry. **03**
 (b) List out the different types of rubber Additives. **04**
 (c) Your company receives an order of 5 Lakh piece of hollow rubber O-ring to be supplied annually to a Car manufacturing company. The weight of a Rubber O-ring is 60 gram. Calculate (i) Specific gravity of compound (ii) Cost of one O-Ring. **07**
- OR**
- Q.4** (a) List out the different inorganic pigments used in rubber industry. **03**
 (b) Write a Brief note on Peptizer. **04**
 (c) “Textiles are used as Reinforcing Agents.” Justify the statement. **07**
- Q.5** (a) What is the difference between Mixing and Art of compounding? **03**
 (b) Give the classification of Blowing agent and explain any one. **04**
 (c) Explain the different Grades of carbon black with its Properties and application. **07**
- OR**
- Q.5** (a) List out the different grades of Silica and give its importance. **03**
 (b) Write a brief note on Azo di carbamid . **04**
 (c) Explain the “Channel black process “with flow diagram in detail. **07**
