

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012

Subject code: 142601

Date: 23/05/2012

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) Discuss the importance of Peptisers in rubber Compounding.
- (ii) Give the difference between Paraffinic Oil & Naphthenic Oil.
- (iii) Write the function of Extenders.

Q.1 (b) Answer the following. **08**

- (i) Discuss in detail about Ester Plasticisers.
- (ii) Define the term 'Factice'. Factice are available in how many grades? Discuss any two in detail.

Q. 2 (a) Company has to make a microcellular Sheet of 25" X25" & 6 mm thickness. Find its manufacturing cost considering 30% expansion in mold release. **07**

Q. 2 (b) Discuss the importance of Accelerators in Rubber Product. Which properties are required for Accelerators? Write in detail about it. **07**

OR

(b) Short Note on Retarders. **07**

Q. 3 (a) Describe in detail about manufacturing of Carbon Black by Furnace process with diagram. **07**

(b) Define the term 'Ageing' for rubber product. Write in detail about factors affecting Ageing. **07**

OR

Q. 3 (a) List the different grades of Carbon Black. Write the properties & applications of any three grades. **07**

(b) Explain about Mechanism of Oxidation for Antioxidants. **07**

Q. 4 (a) Short Note on Organic Pigments. **07**

(b) "Textiles are used as reinforcing agents for rubber products". Justify the statement. **07**

OR

Q. 4 (a) Write in detail about Red Pigments. **07**

(b) Discuss in detail about Integral Bonding Additives & Stiffening Agents. **07**

Q. 5 (a) Define the term "Blowing Agents". Discuss the difference between Organic & Inorganic Blowing Agents. **04**

(b) Give the difference between Reinforcing Fillers & Inert fillers. **04**

(c) List the name of Organic fillers used in Rubber Industries. Write any three in detail. **06**

Q. 5 (a) Short note on Dinitroso Pentamethylene Tetramine Blowing agent. **04**

(b) Short note on China Clay. **04**

(c) Write in detail about Extensity, Intensity & Geometrical Factor. **06**
