| Seat No.: | Enrolment No. |
|-----------|---------------|
| Scat 110 | Lindinch 10. |

GUJARAT TECHNOLOGICAL UNIVERSITY

| | | BE – SEMESTER V • EXAMINATION – WINTER - 2012 | |
|------------|---------------|---|----------|
| • | | code: 152605 Date: 23-01-2013 | |
| Subj | ect l | Name: Rubbers: Manufacturing & its Applications | |
| Time | e: 0 2 | 2:30 pm to 05:00 pm Total Marks: 70 | |
| Instr | ucti | ons: | |
| | 1. | Attempt all questions. | |
| | 2. | Make suitable assumptions wherever necessary. | |
| | 3. | Figures to the right indicate full marks. | |
| Λ1 | (a) | Answer the following. | 08 |
| Q.1 | (a) 1. | Give the reaction mechanism for Acrylonitrile monomer. | Vo |
| | 2. | List the types of Polymerisation method. | |
| | 3. | Write any two properties & applications of PBR. | |
| | 4. | Define the term 'Polymerisation.' | |
| | (b) | Explain the Chemistry of EPDM Rubber. | 06 |
| Q.2 | (a) | Write the applications of rubber in Civil engineering & Electrical Engineering field. | 07 |
| | (b) | Discuss the general Overview for Cellular rubber Products. OR | 07 |
| | (b) | Discuss the general Overview for Conveyor Belt & V Belt. | 07 |
| Q.3 | (a) | Answer the following. | |
| | (i) | Discuss in detail about the properties of Raw Natural Rubber. | 06 |
| | (ii) | Explain the classification of sulphur vulcanization system. Which different | 04 |
| | | types of crosslinks take place during the sulphur vulcanization? | |
| | (b) | · | 04 |
| 0.2 | (2) | OR Anamon the following | |
| Q.3 | (a) (i) | Answer the following. Give the different types of cauotchuc. Explain any three. | 06 |
| | (ii) | | 04 |
| | (11) | Resistance (ii) Dynamic properties. | 04 |
| | (b) | How is molecular weight determined by osmotic pressure method? | 04 |
| Q.4 | | Answer the following. | |
| C - | (a) | | 07 |
| | . , | and explain the manufacturing process of this monomer in detail. | |
| | (b) | Explain the Free-radical mechanism steps by giving reactions. OR | 07 |
| Q.4 | (a) | List the name of reagents used in production of Polystyrene monomer & explain its | 07 |
| | (1.) | manufacturing process in detail. | 07 |
| 0.5 | (b) | · · · · · · · · · · · · · · · · · · · | 07 |
| Q.5 | (a) | | 07 07 |
| | (b) | OR | U/ |
| Q.5 | (a) | | 07 |

07

(b) Discuss the influence of ACN(Acrylonitrile) content on properties of NBR.