

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. IST Semester–Remedial Examination – July- 2011****Subject code: 712502N****Subject Name: Theory and Design of Textile Machinery-I****Date: 08/07/2011****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) Discuss various developments made in the licker-in wires for high production carding. **07**
- (b) Enumerate research findings for optimizing waste and cleaning efficiency of a blow-room line. **07**
- Q.2** (a) Write on effect of pre-and-post card segment settings on cleanliness, nep level and short fibres. **07**
- (b) State basic functions of a Draw-frame and describe design changes made in the drafting arrangement of a high speed draw frame to achieve these objectives. **07**
- OR**
- (b) Describe cleaning effect achieved by Fine cleaning machines used in Zone-4 of a Blow-room line. Which machines are used in this zone? **07**
- Q.3** (a) Mention lap preparation sequences used for processing short staple Indian cotton. Which sequence gives maximum Batt strength and cohesion? **07**
- (b) “New generation combers show better fibre selectivity with optimum noil %.” **07**
Discuss the statement with reference to design modifications made in circular comb, top comb and nippers.
- OR**
- Q.3** (a) Discuss the importance of mixing in modern Blow-room line. Describe Multimixer MPM-6 (Trutzschler) with a neat sketch. **07**
- (b) Describe the effect of design changes made in the following on roving quality: **07**
(a) Flyer (b) Drafting system (c) Builder Mechanism
- Q.4** (a) Describe the features of Inverter Mechanism used on Blendomat –BDT 020 line for effective opening and blending. **07**
- (b) Highlight the necessity of Autolevelling at card and mention different types of autolevellers used. **07**
- OR**
- Q.4** (a) Describe various designs of opening devices used in Blow-room, along with their importance. **07**
- (b) Give a brief account of developments made at card to achieve higher productivity and performance. **07**
- Q.5** (a) Discuss the twist-tension interaction on a ring frame. What is its effect on the end breakage rate? **07**
- (b) Discuss the use of robotics on a ring frame for monitoring piecing, cleaning and transportation of material **07**
- OR**
- Q.5** (a) Discuss the design changes incorporated with high speed rings and travellers. Describe modern ring and traveller combination used for high speed spinning, with a neat diagram, along with its advantages. **07**
- (b) State features of G-30 ring frame. **07**
