

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – WINTER 2012****Subject code: 712502N****Date: 09-01-2013****Subject Name: Theory and Design of Textile Machinery – I****Time: 02.30 pm – 05.00 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) Explain the concept of consistent, gentle and progressive opening based on opening roller wire clothing and tuft size from blowroom to card. **07**

(b) List out the modifications in Schalfhrost Autocoro 360 to improve yarn quality. **07**

Q.2 (a) Why automation is necessity to upgrade quality and productivity? What are the development stages in automation taken in spinning? Also list out the problems arise due to it in spinning. **07**

(b) How deblending occur at drafting arrangement? What are the purposes and significance of blending in spinning line? Also discuss in brief different methods of blending. **07**

OR

(b) Write a note on Uster Zellwegar “Bale Inventory Analysis System”. **07**

Q.3 (a) List out the different type of separators based on objects. In detail different types of dedusting used by manufacturers. **07**

(b) Discuss various developments made in flat and doffer wires for high speed production card. **07**

OR

Q.3 (a) Discuss the fundamental requirements of opener and cleaner in a modern blowroom line. What are the limitations of conventional opening and cleaning machine? **07**

(b) Why autoleveller is must on modern card? With neat sketch mention different types of autoleveller on card. **07**

Q.4 (a) Give a brief account of design developments made at card to enhance the performance. **07**

(b) Write a note on 4 AXIS multi drive and roving monitoring system on speed frame. **07**

OR

Q.4 (a) What are merits and demerits of chute feed system. With neat sketch explain vibrafeed chute feed system. **07**

Q.4 (b) List out unique design features of UNIBlend and Foreign Part Separator SECUROPROP SP-FPU. **07**

Q.5 (a) Explain with neat diagram concentric nipper movement to meet the requirement of heavy lap feed. **07**

(b) Compare the spinning triangle and design of drafting system of conventional ring frame and condensed spinning system. **07**

OR

Q.5 (a) Write a note on orbit and SU ring. **07**

(b) Discuss the design modification in circular and top comb of modern comber. **07**
