Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject code: 152904 **Date: 05/06/2012**

Subject Name: Modern Yarn Production

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)** Write briefly on: (Any two) **07**

(1) What is draw ratio? How does it differ from stretch ratio?
(2) Explain principle of stretch breaking device.
(3) State key differences simultaneous and sequential draw texturing.

(b) Discuss effect of back doubling and false twist effect on rotor yarn quality. **07**

Q.2 **(a)** Explain the principle of open end spinning with neat sketch. Why it is known as "break spinning". **07**

(b) What is the function of a rotor in rotor spinning? Also discuss the effect of rotor speed and rotor diameter on yarn quality and spinning performance. **07**

OR

(b) List out the advantage and limitations of rotor spinning process. Also briefly explain importance of Informator in Autocoro288 rotor spinning. **07**

Q.3 **(a)** Explain the principle of "Edge crimping" with a neat sketch and state the factors influence the characteristics of these yarn. **07**

(b) Classify the textured yarns with the production method and uses. **07**

OR

Q.3 **(a)** Explain with diagram yarn formation in ring spinning and comfor spinning. Explain the Rieter comfor spinning process with properties. **07**

(b) How parallel yarn differs from ring spun and open end yarn? Explain qualitative advantage of parallel yarn over ring spun yarn. **07**

Q.4 **(a)** Discuss the significance of following in cutting method employed for tow to top conversion **07**

(1) Shuffling
(2) Double variable cut attachment
(3) Debonding

(b) "Tow presentation and tow features play a vital role in producing uniform lap quality" Discuss this statement in view of tow manufacture. **07**

OR

Q.4 **(a)** Explain air texturing principle with neat sketch and their properties. **07**

(b) Explain stretch breaking principle used for tow to top conversion. Suggest the methods to control the minimum fibre length. **07**

Q.5 **(a)** Elaborately explain the principle of fasciated yarn spinning. **07**

(b) With neat diagram and principle, describe the DREF III spinning process. **07**

OR

Q.5 **(a)** Briefly discuss the air flow condition inside the rotor and effect of rotor groove angle in rotor spinning process. **07**

(b) Explain the production process of PSL friction spinning machine. **07**

****