Mansoura University Faculty Of Engineering Textile Dept.	Sept. 2013 Time:3hr	Post graduate studies M. Sc. Exam Advanced Spinning Code 7711

Answer the following questions:

Q.1

i. Critically review the various spinning systems indicating the main characteristics of the novel spinning process, the possibilities of use, the relative merits and limitation of each system.

ii. Write notes on :
- The different twist insertion in spinning systems indicating twist potential.
- The characteristics properties of the various types of yarn and idealized diagram of yarn structure.

iii. Compare between the processing principles, productivity of the process and production costs of the various systems.

(20 mark)

Q.2

"The elimination of the spinning triangle by incorporating a new condensing zoon after the drafting system has been opened up new insertion prospects to ring spinning systems. Some of these processes well known by Compacting Spinning".

i. In compact spinning :
- Discuss the main object of the system.
- Compare between fiber condensing zone has been developed by Rieter " Comfor spin" , Suessen " Elite" system , Zinser "Air –ComTEx 700 " and others.

ii. Write an essay entitled " Comfor Spin " machines in terms of : Market of machines , technology, yarn characteristics and applications of the system.

iii. Write an essay entitled "Elite Compact Spinning " a new technique for manufacture of woven and knitted fabrics of high quality from long staple fibers.

(20 mark)

Q.3

" In non-continuous Spinning The fiber strand undergoes a complete or partial separation before it is finally reconsolidated into a yarn " write an essay coverage : operating principle and machine specification by this type of spinning include:

Rotor spinning

ii. Electrostatics spinning

iii. Air Vortex Spinning

iv. Friction spinning

(20 mark)

Q.4

"The core and sheath materials of core and wrap yarns can be selected individually to satisfy physical or aesthetic requirements or to provide special functional advantages".

i. Describe progress in producing all staple core and wrap yarns by modifying common and commercial spinning m/c's and specialty m/c's.

ii. For wrap spinning "Lessona cover spun yarn and parafil system" discuss the influence of material and m/c parameters on yarn quality.

iii. Explain the technological and economic interrelationships.

(20 mark)

Q.5

"Several different spinning m/c' s which have varying levels of industrial acceptance adopted for producing Rotofil yarn. The idealized structure of yarn consists of a core of parallel fibers held together by wrapper fibers. Both fibers composed of the same staple fiber material".
In the light of the above statement, discuss with illustrations for group of false twist process " Murata jet spinning, Dref 3 process and Plyfil spinning process" in terms of the following :

i. The principles of twist insertion.

ii. Raw martial requirements and yarn characteristics.

iii. Interrelationships in spinning technology and economics.

(20 mark)

With best regards

Prof. Dr. Rizk El-Bealy