

# TXL371 Theory of Textile Structures

## Minor II

### PART A

(Mark Answer Sheet – PART A)

1. Explain the fibre straightening, straining and slippage in yarn during progressive yarn deformation and justify that fibre straining percentage along the length of the fibres in different segments of yarn is not uniform for different level of yarn extension. (5)
2. Justify the statements (5)
  - (a) It is preferable to consider the zone of equal area to measure the fibre migration in yarn, so that fibres are equally distributed between all zones. Justify the statement.
  - (b) In general, longer, finer and higher modulus fibres tend to migrate to core of the yarn
3. 5.0 kg of twisted acetate multifilament yarn composed of 120 monofilaments having 12 turns/cm. Parameters of the yarn are changed in such a way that twist increases by 40% and packing density by 8%. If the initial packing density of the yarn is 0.65 and denier of the monofilament is 2.0. Calculate increase in the weight of the same length of yarn. (5)

### PART B

(Mark Answer Sheet – PART B)

1. A plain woven cotton fabric made from same warp and weft yarns has the following particulars:

	<u>Warp</u>	<u>Weft</u>
Crimp Amplitude (mm)	0.16	0.20
Weave Angle (Degrees)	28	37

Calculate the cloth sett using the basic equations of Peirce's Geometry without any approximation. (10)