

TX L232 Fabric Manufacture II (Nonwoven Part)
Minor – I

Marks - 10

Answer all questions

3

1. With neat drawing, very briefly mention the activities in “**carding triad**” zone of roller top card. [Note: Mark clearly the directions of motion and wire point direction of each component]

["Carding triad" zone is the interacting zone between "worker (or roller)", "stripper (or clearer)" and cylinder surface.]

3+2+2 = 7

- 2.a. Briefly describe, with neat schematic sketch, a perpendicular-lay process of batt formation for nonwoven fabric manufacturing line. Also mention its merits over other laying processes.

- b. In a cross-lapping system, a 1.5 m wide carding machine is producing a card web of areal density 30 g/m^2 , at speed of 75 m/min . The cross-lapper produces the final batt of 3m wide at speed of 15 m/min . [Note: Consider that the carding machine is producing the web with all the fibres parallel to the delivery direction]

- (i) What will be the areal density (g/m^2) of the final batt?
(ii) What will be the angle of fiber orientation relative to the longitudinal direction of the cross-laid batt?