

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. Sem. – IInd - Examination – June/July- 2011****Subject code: 1722502****Subject Name: Theory of Yarn Manufacture****Date: 24/06/2011****Time: 10:30 am – 01:00 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) List out types of materials used to manufacture friction disc with their merits and demerits. **07**
- (b) Discuss, why one should study the behavior of floating fibre during drafting also derive the equation of drafting force in a draw frame. **07**
- Q.2** (a) List out (any five) the types of nozzle used in air jet texturing with neat sketch and special features. **07**
- (b) What is “ideal drafting”? In short explain “theory of drafting”. **07**
- OR**
- (b) Explain fibre acceleration behind top comb in comber and state its effect on comber performance. **07**
- Q.3** (a) Classify air jet textured yarn with neat sketch. **07**
- (b) In air jet texturing, discuss in detail the jet baffles and size of jet. **07**
- OR**
- Q.3** (a) Discuss the role of water in air jet texturing process. **07**
- (b) Explain the faults occur due to intermingling process. **07**
- Q.4** (a) With neat sketch, explain double density false twist process machine. **07**
- (b) List out package build faults of false twist process. **07**
- OR**
- Q.4** (a) Layout multishaft false twist machine with neat sketch. **07**
- (b) How torque free yarn produced with use of air jet. **07**
- Q.5** (a) Derive the equation of yarn tension at any radius ‘r’. **07**
- (b) Fibre length distribution of fibre at front roller of a draw frame is as follows **07**

Length of fibre in cms (l)	6	5	4	3	2	1	Total
No. of fibres (frequency)	0	6	8	7	3	2	26

If force required to withdraw single fibre from bundle is 1.3 gms and if there are 4600 fibres entering from back roller and draft employed is 25. Calculate drafting force required to draft the material.

OR

- Q.5** (a) Discuss the process variables in false twist texturing. **07**
- (b) What is the role of cooling plates in false twist process? **07**
