Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII EXAMINATION – WINTER 2015

Subject Code:182901 **Date:09/12/2015**

Subject Name: Principles of Textile Process

Time: 2:30pm to 5:00pm **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)**	Explain in detail evaluation of blow room cleaning efficiency.	**07**
	(b)	Derive an equation for traveller speed.	**07**
Q.2	**(a)**	Discuss in detail how yarn content can be optimized on ring spun package.	**07**
	(b)	Explain theory of fiber hook formation and hook removal at card and in drawn sliver.	**07**
		OR	
	(b)	With the help of neat sketch, discuss and derive necessary equations related to winding tension in balloon at ring spinning.	**07**
Q.3	**(a)**	Discuss the theory of end breaks in ring frame.	**07**
	(b)	Explain Transfer efficiency of card. Hence derive an equation to calculate transfer efficiency of card.	**07**
		OR	
Q.3	**(a)**	Explain the following : (i) Factors affecting Drafting force. (ii) Parameters affecting cylinder load.	**07**
	(b)	Draw the unwinding tension curve for ring bobbin from full bobbin to empty bobbin stage. Hence discuss various factors affecting unwinding tension.	**07**
Q.4	**(a)**	Draw and compare the retardation curve obtained for hinged swell and floating swell. In which case retardation is more uniform ? Why ?	**10**
	(b)	If a loom has reed space of 1.25 mts, the average velocity of shuttle is 12.5 mts/sec , shuttle enters the shed at 85^0 of crank and leaves at 215^0, the length of shuttle is 25 mm, calculate maximum loom speed.	**04**
		OR	
Q.4	**(a)**	Describe the experiment of Thomas and Vincent to study the forces acting on shuttle during acceleration . Hence draw nominal and actual curves. Explain the 'Lag' observed . Is the acceleration of shuttle uniform ? Why ?	**10**
	(b)	With the help of elastic model , explain the alacrity of picking mechanism deriving its equation.	**04**
Q.5	**(a)**	Discuss the importance of size pick. Hence discuss various factors affecting size pick up.	**07**
	(b)	Discuss briefly various limitations of negative friction type let off motion.	**07**
		OR	
Q.5	**(a)**	Explain the term Kinematics. Hence derive equation for sley velocity .	**08**
	(b)	Discuss interrelationship between shedding and beat up briefly with suitable sketch.	**06**

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