Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– VIII (New) EXAMINATION – WINTER 2019

Subject Code: 2182901 **Date: 27/11/2019**

Subject Name: Principles of Textile Processes

Time: 02:30 PM TO 05:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			MARKS
Q.1	**(a)**	Briefly explain about the cleaning efficiency of blow room?	**03**
	(b)	Write the various factors affecting motion of sley.	**04**
	(c)	Derive an equation of yarn tension at any radius ‘r’.	**07**
Q.2	**(a)**	Discuss the important of size pick up.	**03**
	(b)	Is the acceleration of shuttle uniform? Why?	**04**
	(c)	Derive an equation for traveler speed.	**07**
		OR	
	(c)	Derive an equation for sley velocity with necessary assumption.	**07**
Q.3	**(a)**	What is Transfer efficiency?	**03**
	(b)	Explain only procedure to find out transfer efficiency of card.	**04**
	(c)	What is cylinder loading? Derive an equation to calculate cylinder loading.	**07**
		OR	
Q.3	**(a)**	What is perfect drafting? Why it is not achieved in conventional draw frame.	**03**
	(b)	Explain the significance of fiber acceleration behind top comb.	**04**
	(c)	Fiber length distribution at front roller of a draw frame is as follows:	**07**

Length of fiber in cms (I)	5	4	3	2	1	Total
No. of fibers (frequency)	10	14	10	8	8	50

if force required withdrawing single fiber from bundle is 2.5gm and there are 4500 fibers entering from back roller and drafting employed is 12. Calculate drafting force required to raft the material.

Q.4	**(a)**	Discuss the factors affecting drafting force.	**03**
	(b)	Discuss the causes of end breaks in ring spinning.	**04**
	(c)	Discuss the comber fractionation efficiency.	**07**
		OR	
Q.4	**(a)**	Explain interrelationship between shedding and beating.	**03**
	(b)	Discuss the various factors affecting the unwinding tension.	**04**
	(c)	Explain the retardation of shuttle with hinged swell, along with necessary diagrams.	**07**
Q.5	**(a)**	Explain, chase length and coil density in reference to optimizing yarn content on ring bobbin.	**03**
	(b)	Write in short on power required for picking.	**04**
	(c)	Discuss briefly effect of l/r ratio on type of movement of sley.	**07**
		OR	
Q.5	**(a)**	Derive the formula for friction forces in negative let off motion.	**03**
	(b)	Explain Alacrity with respect to picking mechanism.	**04**
	(c)	Discuss the velocity and acceleration of projectile with suitable curves.	**07**

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