GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–VIII (NEW) EXAMINATION – WINTER 2020

Subject Code:2182901   **Date:25/01/2021**
Subject Name:Principles of Textile Processes
Time:02:00 PM TO 04:00 PM   **Total Marks: 56**

Instructions:
1. **Attempt any FOUR questions out of EIGHT questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain, how to evaluate cleaning efficiency of blow room?	**03**
	(b)	Explain interrelationship between shedding and beating.	**04**
	(c)	What is perfect drafting? Explain theory of drafting put forwarded by Foster.	**07**
Q.2	**(a)**	Define eccentricity of sley. Also mention any two ways of changing eccentricity of sley.	**03**
	(b)	State equations of unwinding yarn tension of ring bobbin and discuss each terms which are affecting the unwinding tension.	**04**
	(c)	With the help of retardation curve compare the performance of conventional hinged swell with that of floating swell.	**07**
Q.3	**(a)**	What are the various factors affecting drafting force, explain in briefly.	**03**
	(b)	Explain trailing hook formation mechanism on a card.	**04**
	(c)	What is cylinder loading? Derive an equation to calculate cylinder loading.	**07**
Q.4	**(a)**	What are the limitations of negative friction type let off motion?	**03**
	(b)	State important aspect to be considered for designing of picking cam.	**04**
	(c)	Define and derive comber fractionation efficiency.	**07**
Q.5	**(a)**	Which are factors affecting velocity of the shuttle on a loom?	**03**
	(b)	State various reasons of end breaks at ring frame.	**04**
	(c)	Derive an equation to calculate drafting force.	**07**
Q.6	**(a)**	How to find out fiber configuration in card sliver?	**03**
	(b)	How unwinding tension varies when unwinding of yarn take place from ring bobbin? Also, state importance of unwinding accelerations.	**04**
	(c)	What is size pick up? Discuss the various factors affecting it.	**07**
Q.7	**(a)**	Explain the alacrity of picking mechanism.	**03**
	(b)	Write in short on 'Power required for picking'.	**04**
	(c)	Derive an equation for sley displacement and velocity for four link sley drive.	**07**
Q.8	**(a)**	Only draw diagram to show the velocity, acceleration and retardation of projectile.	**03**
	(b)	Discuss briefly various aspects of weft insertion in airjet loom.	**04**
	(c)	Derive an equation of yarn tension at any radius 'r'.	**07**

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