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GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (OLD) EXAMINATION – WINTER 2018

Subject Code: 172905   **Date: 06/12/2018**

Subject Name: Fibre Science & Elements Of Textile Structure

Time: 10:30 AM TO 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)**	Write in brief about Heats of sorption in fibres.	**07**
	(b)	Derive all the equations related to Porosity of fabric.	**07**
Q.2	**(a)**	Discuss in detail about fundamental structural features of yarn.	**07**
	(b)	Derive equation for Pierce geometry of Plain woven fabric "when weft is straight and warp is not jammed."	**07**
		OR	
	(b)	Discuss the technical significance of swelling in fibres & also how its measured?	**07**
Q.3	**(a)**	Explain Packing of yarn. Discuss the disturbing factors in ideal packing of yarn.	**07**
	(b)	Derive the relationship between Specific Volume of yarn, Yarn Count & Twist.	**07**
		OR	
Q.3	**(a)**	Derive: $\tan\alpha = 0.0112 V y^{1/2}\tau$.	**08**
	(b)	Write short note on: Order & disorder in fibre structure.	**06**
Q.4	**(a)**	Write short note on: Analysis by Correlogram.	**07**
	(b)	What are the parameters to characterize the Migration?	**07**
		OR	
Q.4	**(a)**	Give the reasons for Differential Migration.	**07**
	(b)	Describe Hamilton method of Coil Winding.	**07**
Q.5	**(a)**	Drive the equations for warp and weft cover factor in direct and indirect system.	**08**
	(b)	Write a note on fabric density and specific volume.	**06**
		OR	
Q.5	**(a)**	Derive the equations for fabric weight.	**08**
	(b)	Discuss the Walen's method of crimp measurement.	**06**

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