Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II (Old course)• REMEDIAL EXAMINATION – SUMMER 2015

Subject Code: 1722501 **Date:16/05/2015**

Subject Name: Theory and Design of Textile Machines II

Time: 02:30 pm to 5:00 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)**	While considering parameters affecting selection of modern looms, discuss effect of following on performance: (i) Influence of warp length (ii) Flexibility	**07**
	(b)	Compare stress on the weft yarn with reference to projectile, air jet and rapier looms.	**07**
Q.2	**(a)**	Which factors affect the yarn stresses in warping and beaming? Discuss any two in detail.	**07**
	(b)	While considering polytropic air flow, define different zones of the main nozzle design.	**07**
		OR	
	(b)	What is the effect of sizing on abrasion resistance and tensile strength of yarn?	**07**
Q.3	**(a)**	With special reference to narrow fabric weaving, what are the effects of pick spacing and warp tension on beat-up force?	**08**
	(b)	Multicoloured warps of a 50s Nm spun yarns are wound on a horizontal section warping drum of 1.5 m diameter, on which inclines are fixed at 15 deg to the axis. Each warp is 3000 m long and 2 m wide and contains 6500 ends. Warp density on drum is 0.6 g/cm3. Determine the depth of yarn on drum when the warp is completed and the corresponding reed traverse per section.	**06**
		OR	
Q.3	**(a)**	Write on various equations of air drag acting parallel and perpendicular to yarn axis on an air jet loom.	**07**
	(b)	Write briefly on cloth fell position.	**07**
Q.4		Taking a hypothetical example, show general features of shed-shape characteristics taking reed displacement angle versus shed angle. Also draw only shed-shape for a loom having no dwell and having shed crossing at 330 and 270 degrees.	**14**
		OR	
Q.4		Write on various equations for axial and transverse air flows acting on the weft yarn on air jet loom. Also write on equation taking in to consideration complex yarn structure.	**14**
Q.5	**(a)**	Draw sketches of four bar, six bar and conjugate cam type beat-up mechanisms. What are the important design conclusions related with all three mechanisms?	**07**
	(b)	Write in short on effect of relay nozzle diameter and blowing time on loom performance.	**07**
		OR	
Q.5	**(a)**	Compare performance of cycloidal cam to SHM cam in terms of warp breakages and warp tension.	**07**
	(b)	How starting mark (Set marks) defect originate on loom? Explain for different let off mechanisms.	