Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER–VIII EXAMINATION – SUMMER 2016**

**Subject Code:182901** **Date:10/05/2016**

**Subject Name:Principles of Textile Process**

**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.**

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|---|---|---|---|
| **Q.1** | **(a)** | Describe the method to calculate fractionating efficiency of comber. | **07** |
| | **(b)** | What is cleaning efficiency of blow-room? Explain in detail Evaluation of Blow room cleaning efficiency. | **07** |
| **Q.2** | **(a)** | Discuss factors affecting drafting force? Hence derive an equation to calculate drafting force. | **07** |
| | **(b)** | State configuration of fibres in card sliver. Hence explain the techniques to detect fibre configuration in card sliver. | **07** |
| | | **OR** | |
| | **(b)** | Derive an equation to calculate Cylinder load. | **07** |
| **Q.3** | **(a)** | Derive an equation of Yarn tension at any radius ‘r’ in spinning balloon. | **07** |
| | **(b)** | Discuss the theory of end breaks in Speed frame. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | Derive necessary equation related to winding tension (Tw) in a spinning balloon. | **07** |
| | **(b)** | What is transfer ratio. Discuss the procedure to find out transfer efficiency of card experimentally. | **07** |
| **Q.4** | **(a)** | Discuss in detail various factors affecting stretch on sizing machine. | **07** |
| | **(b)** | State in detail how stretch can be measured in sizing machine? | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | Discuss the factors affecting short and medium term tension variation in negative friction type of let off mechanism. | **07** |
| | **(b)** | With suitable curves discuss the velocity and acceleration of Projectile. | **07** |
| **Q.5** | **(a)** | Explain retardation of shuttle by Hinged swell with suitable diagram. Is the retardation uniform? Discuss with retardation curve. | **07** |
| | **(b)** | Explain short and long term variations during unwinding of Ring bobbins on winding machines with suitable diagrams. | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | Explain Kinematics & discuss kinematics of sley mechanism. Derive equations for sley velocity & sley acceleration using instantaneous centre method. | **10** |
| | **(b)** | Discuss briefly effect of l/r ratio on type of movement to sley. | **04** |

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