

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**
