

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE- SEMESTER-III (NEW) EXAMINATION – WINTER 2024**

**Subject Code:3132907**

**Date:10-12-2024**

**Subject Name: Fabric Formation I**

**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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1**
- (a) Explain the objects of winding. 3
  - (b) Enlist the features of the sectional warping machine. 4
  - (c) Explain the modern size box with a diagram. 7
- Q.2**
- (a) Arrange a sequence of operations for warp and weft from yarn to grey fabric stage. 3
  - (b) What is the role of the tapered wooden drum in the sectional warping machine? 4
  - (c) Calculate production of sizing machine in no of beam /shift, if a sizing machine runs at 70 MPM with 55% efficiency. Length of yarn on each beam is 1800 meter. 7
- OR**
- (c) With neat sketch explain working of multi-cylinder sizing machine. 7
- Q.3**
- (a) Discuss the various ingredients used in size recipe. 3
  - (b) Discuss the role of adhesive in sizing paste. 4
  - (c) Describe the working principle of sectional warping with suitable diagram. 7
- OR**
- Q.3**
- (a) Why sectional warping is not essential for all types of woven fabric. 3
  - (b) Evaluate the production of winding machine in lbs/shift, if machine runs at 850 drum rpm, drum dia is 3.8” , yarn count is 24 ne. 4
  - (c) Explain working principle of electronic yarn clearer. 7
- Q.4**
- (a) What is patterning? How can we control it. 3
  - (b) Discuss the classmate faults. 4
  - (c) Explain any four, different types of creel used warping. 7
- OR**
- Q.4**
- (a) Highlight the role of stop motion in winding machine. 3
  - (b) State any three recent development of modern winder. 4
  - (c) Compare cone winding with cheese winding process/machine. 7
- Q.5**
- (a) Discuss the role of tensioner. 3
  - (b) Compare random and precision winding machine. 4
  - (c) Discuss causes and remedial action for various types of package faults. 7
- OR**
- Q.5**
- (a) What is the role of drawing-in operation? 3
  - (b) Explore any two sizing faults causes and remedies. 4
  - (c) Describe splicing operation with neat sketch. 7