

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2023

Subject Code:3132907

Date:25-01-2024

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) Define term: wind, traverse ratio and coil angle. 03
(b) Compare mechanical yarn clearer with electronic yarn clearer. 04
(c) What are the objectives of yarn preparatory process? Give the flow chart of warp and weft preparatory processes 07

- Q.2 (a) Draw and give the function of groove drum and sectional drum. 03
(b) A mill wind cheese of 152 mm traverse length on cone winders on which the package is rotated by surface contact with three crossing drums of diameter 7 cm. Determine the coil angle. 04
(c) Draw a neat sketch of warp yarn through multi-cylinder sizing machine and explain the function of Float, Immersion roller & Over flow. 07

OR

- (c) Give objective of pirn winding. Explain working of any pirn winding machine with suitable diagram. 07
- Q.3 (a) Explain additive type of tensioner. 03
(b) Calculate production of cone winding machine having following data. 04
Drum Speed : 2000 rpm
Drum Diameter : 3 inches
No of Drum : 60
Shift Hours: 7.5
Efficiency: 85 %
Count of Yarn: 40 Ne
Find out actual production in kgs.
(c) What is patterning? How patterning can be avoided? Explain anti patterning mechanism with neat sketch. 07

OR

- Q.3 (a) Draw the structure of various knots for yarn joining. 03
(b) What is splicing? State the stages of splicing of spun yarn. 04
(c) Draw yarn fault classification of Uster Classimat II. How output of yarn fault classification is useful in different ways? 07

- Q.4 (a) Compare ordinary and sectional warping machine. 03
(b) Discuss about any two winding faults and their remedies. 04
(c) What are the basic requirements of weaver's beam? Explain direct warping process with neat sketch. 07

OR

- Q.4 (a) Find out the length of yarn on a package weight of yarn in 3 kg and yarn count is 20s English. 03
(b) Discuss about continuous chain creel, truck creel and magazine creel of 04

- warping machine.
- (c) Give the objective of warping process. Explain the concept of sectional warping process. **07**
- Q.5** (a) How to maintain level of size in size box? **03**
- (b) Write briefly about concept of single end sizing. **04**
- (c) What are the objectives of sizing? Name different ingredients used in size mixture? How the size mixture is prepared? **07**
- OR**
- Q.5** (a) Explain briefly about drawing-in and denting operation. **03**
- (b) Calculate production in kgs per shift of modern high speed beam warping machine from the following particulars: **04**
- Rpm of winding drum : 240
- Diameter of winding drum : 22 inches
- No of ends : 480
- Efficiency: 80 %
- Count of Yarn: 30 Ne
- (c) Describe various control fitted on modern sizing machines. **07**
