

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024

Subject Code:3152901

Date:28-11-2024

Subject Name:Yarn Manufacture III

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.

		Marks
Q.1	(a) What are the objectives of Ring frame?	03
	(b) What is the function of ring and traveler? Give the name of different types of travelers used in Ring frame.	04
	(c) With a suitable sketch explain the working principle of the Ring frame.	07
Q.2	(a) What is fancy yarn? Write the end use applications of fancy yarn.	03
	(b) What is spinning triangle? How it affects end breakage rate on Ring frame?	04
	(c) With a suitable sketch explain the construction and working of spindle and spindle bearing.	07
	OR	
	(c) With suitable sketches discuss the different types of spindle drive mechanisms used in Ring frame.	07
Q.3	(a) Write the characteristics of good ring and traveler.	03
	(b) Discuss briefly the umbrella creel.	04
	(c) Discuss advancements in the Ring frame.	07
	OR	
Q.3	(a) Draw a sketch showing different parts of a ring.	03
	(b) What is spinning triangle? Write the advantages and disadvantages of long spinning triangle.	04
	(c) Explain the effect of balloon height and diameter on the yarn tension.	07
Q.4	(a) Write functions of a traveler clearer.	03
	(b) Discuss the advantages of inclined ring and traveler.	04
	(c) With suitable sketches explain the various steps involved in the auto doffing mechanism of the Ring frame.	07
	OR	
Q.4	(a) Define the following terms: (i) Center of gravity, and (ii) traveler mass.	03
	(b) Write the functions of balloon control ring and balloon separator in the Ring frame.	04
	(c) With a suitable sketch explain the construction and top roller pressure settings of a pneumatically loaded top arm roller drafting system.	07
Q.5	(a) Draw structures for the snarl yarn and slub yarn.	03
	(b) Using a suitable sketch, explain the production of loop yarn.	04
	(c) Explain the principle of TFO. With a suitable diagram explain the passage of material in TFO.	07

OR

- Q.5** **(a)** What are the effects on double yarn quality by introducing Z on Z and S on S twist. **03**
- (b)** With suitable sketches explain the structure of marl yarn and corkscrew yarn. **04**
- (c)** What is compact spinning? Discuss the advantages of compact spinning. **07**
