

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V EXAMINATION – WINTER 2025****Subject Code:3152901****Date:19-11-2025****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 functions of the ring and traveller in ring frame?	03
	(b) List out the various types of fancy yarn and discuss their applications.	04
	(c) Explain the working principle of a ring frame with a suitable sketch.	07
Q.2	(a) Illustrate the various types of travellers used in a ring frame with suitable sketches.	03
	(b) What are the advantages and disadvantages of using long and short aprons in a roller drafting system?	04
	(c) Write a short note on pneumatic top arm roller drafting system.	07
OR		
	(c) Discuss the characteristics of a good ring and traveller. Identify the types of materials commonly used in manufacturing rings and travellers.	07
Q.3	(a) Give the definition of the following: (i) center of gravity, and (ii) center of symmetry for a traveller.	03
	(b) Briefly discuss the effect of balloon height on yarn tension.	04
	(c) Discuss the various types of spindle drives. Additionally, mention the advantages and disadvantages associated with each method.	07
OR		
Q.3	(a) What are the functions of the balloon checking ring and balloon separators used in ring frame?	03
	(b) Define spinning geometry. Briefly discuss the effect of a long and short spinning triangle on the yarn properties.	04
	(c) With the suitable sketches, explain the bobbin building mechanism for the ring frame.	07
Q.4	(a) Provide a comparison between the properties of 'Z' on 'Z' twist and 'S' on 'Z' twist double yarns.	03
	(b) Discuss the various factors that affects end breaks in the ring frame.	04
	(c) What are the advantages of the auto doffing system in the ring frame? Explain the sequence of steps involved in the auto doffing process with suitable sketches.	07

OR

Q.4	(a)	What is spinning triangle? Show the different dimensions of the spinning triangle.	03
	(b)	Discuss the advantages of inclined ring and traveller.	04
	(c)	Explain the principle of TFO twisting machine. With a suitable sketch, explain the passage of material in a TFO machine.	07
Q.5	(a)	With the suitable sketches, illustrate the structure of loop yarn and snarl yarn.	03
	(b)	What is yarn doubling? Discuss the different types of yarn doubling methods.	04
	(c)	Discuss the working principle of any one compact spinning system and provide a comparison between conventional ring spun yarn and compact ring spun yarn.	07
		OR	
Q.5	(a)	Discuss the structure of Marl yarn.	03
	(b)	Discuss the construction of Chenille yarn.	04
	(c)	Discuss the production method of any two fancy yarn.	07
