

Roll No.....  
Total No. of Questions: [09]

Total No. of Printed Pages: 1

**B. Tech (Textile Engg.) (Semester – 7<sup>th</sup>)**  
**NON CONVENTIONAL YARN MANUFACTURE**  
**Subject Code: BTEXS1701**  
**Paper ID: [18112633]**

**Time: 03 Hours**

**Maximum Marks: 60**

**Instruction for candidates:**

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A**

**(2 marks each)**

Q1. Attempt the following:

- a) Why fibre length and length uniformity are very important parameter in ring spinning?
- b) State the machine parameters which can help in reducing the rigidity of air jet spun yarn.
- c) Show the direction of rotation of the spinning drums in friction spinning.
- d) State the reason of superior mechanical and physical properties of Siro yarn as compared to conventional ring yarn.
- e) State the importance of drum speed in friction spinning in deciding the characteristics of yarn.
- f) How compact spun yarn is different from conventional ring spun yarn? State the difference in the mechanical and physical properties of the yarns.
- g) State the application field of Siro spun yarns.
- h) State the basic principle of self twist yarn production.
- i) Why the abrasion resistance of rotor spun yarn is higher whereas that for AJS is poor?
- j) State one limitation for each of ring and rotor spinning system.

**Section – B**

**(5 marks each)**

- Q2. With the help of a diagram discuss the principle of core spinning system and state the application of such yarn.
- Q3. With the help of neat sketch discuss the twist insertion technique in rotor spinning. Also state the role of rotor groove geometry in deciding the yarn characteristics.
- Q4. Discuss the role of opening roller, influence of rotor diameter and transport channel in governing the yarn characteristics.
- Q5. Give an assessment of the structure property relationship of ring, rotor and air jet spun yarns.
- Q6. What are problems associated with air jet spun yarn? How can you minimize the problems?

**Section – C**

**(10 marks each)**

- Q7. Give a detail assessment of the fibre quality requirements for ring & rotor spinning systems and clearly mention the role of each quality parameters.
- Q8. Give an assessment of the problems associated with spinning of man made or wool fibres in rotor spinning. Suggest some remedial measures too in either case.
- Q9. With the help of neat sketches discuss the yarn production techniques and the properties of Siro and compact spun yarns.