

The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Textile and Apparel Technology



Study Programme	: Bachelor of Technology Honours in Engineering / Bachelor of Industrial Studies Honours
Name of the Examination	: Final Examination
Course Code and Title	: TAX6366 Yarn Manufacture II
Academic Year	: 2021/2022
Date	: 05 th March 2023
Time	: 1330-1630 hours
Duration	: 3 hours

General Instructions

1. Read all instructions carefully before answering the questions.
2. Write down your Index Number in all the pages of the answer script.
3. This question paper consists of Six (06) questions in Three (03) pages.
4. Answer Five (05) questions only. Each question carries 20 marks.
5. Do not write answers to the additional questions.
6. Answer for each question should commence on a new page. If a question has many parts, all the parts should be answered in the chronological order under the same question.
7. Write down the answered question numbers in the space given in the answer book.
8. Answers should be in clear handwriting.
9. Do not use the red colour pen.

- Q1.** (a) Explain the main difference between woollen and worsted yarns. (02 marks)
- (b) List the sequential steps of woollen yarn production system. (03 marks)
- (c) Explain the significance of wool scouring, lubricating, and carbonizing steps done prior to the production of wool yarn. (06 marks)
- (d) Explain four (04) main reasons for blending wool fibers prior to yarn manufacturing process. (04 marks)
- (e) Explain the operation of the "Continuous inclined cleaner" using a suitable diagram. Clearly indicate the material path and the direction in the diagram. (05 marks)
- Q2.** (a) State three (03) objectives of woollen carding process. (03 marks)
- (b) Using suitable diagrams, explain the working actions occurred between the following surfaces of the woollen carding machine.
- i. Between Swift (cylinder) and worker
 - ii. Between worker and stripper
- (06 marks)
- (c) Compare the woollen and worsted carding machines, taking at least three (03) major factors into the account. (06 marks)
- (d) Briefly explain the sequential steps of the "Wet spinning" process in relation to Flax yarn manufacturing process. (05 marks)
- Q3.** (a) What do you understand by the term "Silk reeling". (03 marks)
- (b) Briefly explain any three (03) main types of "Thrown silk" yarns. (06 marks)
- (c) Write short notes on five (05) main stages of the silk yarn manufacturing process. (07 marks)
- (d) Explain in detail what are "Tow" and "Top" in relation to the yarn manufacturing process. (04 marks)

- Q4.** (a) What do you understand by the term "Texturing" pertaining to filaments and yarns? (02 marks)
- (b) Classify and briefly describe the textured yarns according to the standard classification. (06 marks)
- (c) With the aid of a suitable diagram explain the process of air-jet texturing. (06 marks)
- (d) Using a suitable diagram, explain the functions of the "Two-for-one twister" during the yarn folding process. (06 marks)
- Q5.** (a) Briefly explain what you understand by "Folded yarn" and state three (03) objectives of the yarn folding. (04 marks)
- (b) List four (04) common types of fancy yarns and describe any two (02) of them. (06 marks)
- (c) List four (04) advantages of modern yarn spinning systems over the ring spinning system. (04 marks)
- (d) Explain the air vortex spinning process with the use of a suitable diagram. (06 marks)
- Q6.** (a) Explain the friction spinning process with the aid of a diagram. (06 marks)
- (b) Briefly explain the "False twisting principle". (03 marks)
- (c) With the aid of a suitable diagram explain how the false twisting technique is used to produce fasciated (fasciated) yarns. (07 marks)
- (d) Explain any two (02) properties/characteristics of polymers that are essential to produce film tapes. (04 marks)

