



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 : TAX6265
Advanced Weaving Preparation and Machinery
Academic Year : 2020/21
Date : 03rd February 2022
Time : 1400 -1700hrs
Duration : **3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Eight (08)** questions in **Four (04)** pages.
3. Answer question **One (01)**, which is compulsory, and **Five (05)** additional questions.
4. Total number of questions to be answered is **Six (06)**.
5. Question One (01) carries thirty (30) marks and question Two (02) to Eight (08) carry fourteen (14) marks each.
6. Answer for each question should commence from new page.
7. Answers should be in clear handwriting.
8. Do not use red color pens.

01. Compulsory question

- a) Explain the difference between “Knotting” and “Splicing”. (02 marks)
- b) State three (03) reasons for necessity of “quick style changing” in case of mills with modern high performance weaving machines. (03 marks)
- c) State the purpose of “Doubler winder”. (02 marks)
- d) Differentiate between the following two (02) methods of weaving preparation with respect to their operational principles. (04 marks)
- i. Manual drawing – in
 - ii. Semi – automatic drawing – in.
- e) Define the term “Style Changing” in weaving. (02 marks)
- f) Write three (03) advantages of “Two phase rapier machine”. (03 marks)
- g) State two (02) merits and two (02) demerits of “Multi-phase weaving”. (04 marks)
- h) State three (03) advantages of Sulzer projectile weaving over shuttle weaving. (03 marks)
- i) State three (03) disadvantages of the selection mechanism in mechanical dobbies. (03 marks)
- j) State four (04) criteria used to classify winding machines. (02 marks)
- k) State two (02) approaches used to lock warps and weft at selvages to avoid fraying-off. (02 marks)

-End of the compulsory question-**02.**

- a) Give the standard classification of yarn winding machines. (04 marks)
- b) Compare “Automatic winding” and “Pirn winding” considering the followings. (04 marks)
- i. Creeling
 - ii. Doffing
- c) Briefly explain why pirn packages are made as “Nearly parallel wound layer packages”. (06 marks)

03.

- a) Briefly explain why “Single nozzle arrangement” is not suitable for wider Air-jet looms. (04 marks)

- b) Explain how unpurified compressed air has a negative impact on the fabric quality in Air-jet weaving. (04 marks)
- c) Briefly explain how “Telescopic rapier” is designed to reduce the total width of rapier looms. (06 marks)

04.

- a) Briefly explain the reasons for not employing cam operated conventional “Dobby shedding mechanisms” in Shuttle-less weaving machines. (04 marks)
- b) Briefly explain the operating principle of electronic Jacquard shedding mechanism using suitable diagrams. (05 marks)
- c) Write five (05) advantages of electronic Jacquard shedding mechanism over mechanical jacquard shedding mechanism. (05 marks)

05.

- a) Write a short note on any type of mechanical warp let-off mechanism. (06 marks)
- b) Briefly explain four (04) advantages of “Electronic let-off mechanisms” compared to “Mechanical let-off mechanisms”. (08 marks)

06.

- a) Briefly explain why air conditioning is crucial in modern weaving mills than shuttle weaving mills. (06 marks)
- b) Briefly explain the importance of dust and fluff control in weaving mills. (06 marks)
- c) Briefly explain two (02) types of filters used for cleaning return air in weaving mills. (02 marks)

07.

- a) Describe with the aid of suitable figures how the thread eyes of flat steal heald wires are designed. (05 marks)
- b) With the aid of a suitable diagram, briefly explain the parts of a ring temple assembly. (07 marks)
- c) Briefly explain two (02) fabric quality problems associated with temples. (02 marks)

08.

- a) State four (04) requisite traits of a woven fabric selvedge. (04 marks)
- b) Write short notes on any two (02) types of selvages. (06 marks)
- c) Discuss the operational principle of a selvedge formation device used for any of the above selvedge types. (04 marks)

-End of the question paper-